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FOREST SURVEY RELEASE NO. 42

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FOREST STATISTICS
FOR
NORTH CENTRAL AND NORTH GEORGIA
1953

by

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ASHEVILLE, NORTH CAROLINA

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FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The first inventory of forest resources in the State of Georgia by the Forest Survey was made during the period 1934-36, and these findings have been published. Since then, the effects of forest growth, timber cutting, changes in land use, and other factors have caused rapid changes in the growing stock which can only be measured by on-the-ground surveys. A resurvey of forest resources in Georgia was started in July 1950 and the field work was completed in November 1953. This progress report presents statistics on forest area, timber volume, growth, and timber cut for North Central and North Georgia, Survey Units 4 and 5 respectively.

ACKNOWLEDGMENTS

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The Division of Forest Economics is under the direction of James W. Cruikshank. Field inventory work was supervised by L. C. Nix, and photo interpretation was done by R. C. Aldrich. Office compilation of the data was under the direction of Agnes Nichols, assisted by Louise Shuford, Camilla Young, Sammy Wenningham, and Eunice Gamble.

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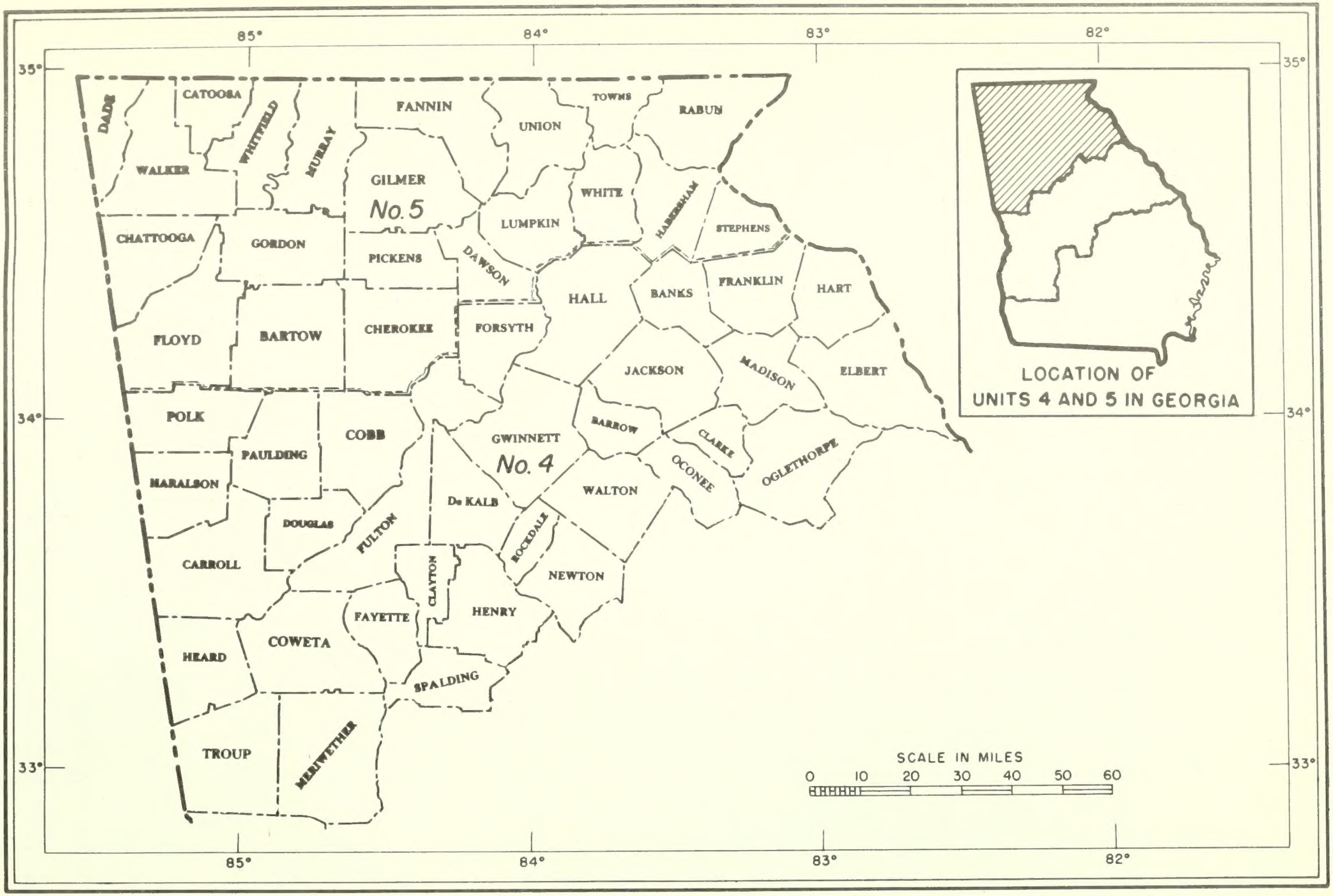

Figure 1.--Counties in North Central and North Georgia included in Survey Units Nos. 4 and 5

FOREST STATISTICS FOR NORTH CENTRAL AND NORTH GEORGIA, 1953

This progress report presents forest resource data for North Central and North Georgia. These areas are the last of five survey units to be covered by a complete resurvey of the State. The statistical tables show 1953 information on forest area, timber volumes, growth, and the amount of timber cut. Changes in forest area and timber volume which have taken place during the past 17 years are also pointed out. The trends were developed by comparing 1953 statistics with those of the original Forest Survey made in 1936.

The statistical tables in this report have been abridged to permit earlier release of the basic data. Detailed tables for each unit similar to those in Forest Survey Release No. 40 are on file at the Southeastern Station. Anyone needing more detailed information may obtain copies of individual tables upon request.

The North Central unit consists of 32 counties in the upper Piedmont designated as Survey Unit No. 4. The North unit is composed of 21 counties in the mountain region which were combined to form Survey Unit No. 5 (fig. 1). Field data were obtained between December 1952 and November 1953 from ground sample plots distributed throughout the individual counties. The methods used in selecting and examining the sample plots are described briefly on page 31.

1953 SURVEY HIGHLIGHTS

Area of commercial forest land increases 1.2 million acres.--During the period between surveys the acreage of commercial forest land in both survey units increased from 5.4 million to 6.6 million acres, a gain of 23 percent. Four-fifths of this increase took place in the North Central unit, where the change amounted to nearly one million acres.

Table A.--Change in commercial forest area, 1936 to 1953

Survey unit	1936	1953	Change	
	Thousand acres	Thousand acres	Thousand acres	Percent
North Central	2,549.0	3,521.9	972.9	+38
North	2,835.3	3,075.4	240.1	+ 8
Total	5,384.3	6,597.3	1,213.0	+23

Forests now occupy 63 percent of the 10.5 million acres of gross land area in the two units. The mountain region is the more heavily forested area with nearly 75 percent of the land devoted to growing timber. Slightly more than 700 thousand acres of commercial forest land are in public ownership, most of which is located in the Chattahoochee National Forest.

Hardwood timber stands increase in area.--The trend in acreage of forest types is toward a larger area of hardwood stands. A comparison of type areas for both surveys shows that 42 percent of the forest land is now in hardwood types as compared to 29 percent in 1936. The 1936 system of type classification was used in both surveys to make the data comparable. This tendency for hardwood stands to take over and occupy larger areas of forest land is widespread throughout the State. The cause usually stems from cutting operations, which remove the pine timber from mixed stands and leave hardwood species in possession of the site.

Yellow pine sawtimber volume shows severe decline.--Since 1936 the board-foot volume in southern yellow pine species has declined from a total of 5.7 billion to 3.0 billion feet, a reduction of 47 percent. The downward trend of pine volume has been parallel in both survey units, and the extent of decline during this relatively short period of time is surprising.

Table B.--Comparison of sawtimber volumes, 1936 and 1953

Species group	North Central Unit			North Unit		
	1936[1]	1953	Change	1936[1]	1953	Change
	Million bd. ft.	Million bd. ft.	Percent	Million bd. ft.	Million bd. ft.	Percent
Yellow pines	3,342	1,708	-49	2,394	1,322	-45
Other softwoods	3	5	+67	252	179	-29
Hardwoods	1,596	1,831	+15	2,317	2,364	+ 2
All species	4,941	3,544	-28	4,963	3,865	-22

[1] Original survey volumes have been recomputed to allow for differences in standards between the two surveys and to provide a uniform basis for comparison. Thus, they will not agree with volumes previously published.

The volume of hardwood sawtimber in both units has increased approximately 7 percent during the same period. This is a relatively minor change, however, when compared to the large reduction in pine volume. The net effect has been a 25-percent decrease in the board-foot volume of all species.

Stand tables for the two surveys reveal sizable increases in the number of sound pine trees 8 inches and smaller in diameter, due largely to the natural restocking of pine on large areas of idle and abandoned fields. On the other hand, the number of pine sawtimber trees 10 inches and larger in diameter decreased from 70 million to 47 million during the period. Utilization of the larger pine trees for sawlogs, pulpwood, and other forest products has far exceeded the rate of replacement through growth. Hardwood trees increased in number through all size classes up to 16 inches in diameter, indicating a much lower rate of utilization for these species.

Volume of pine growing stock also decreases.--Estimates of growing stock volume are calculated in terms of cubic feet of solid wood. These estimates include all sound pole-size trees (starting at 5.0 inches in diameter) as well as the volume in the larger sawtimber trees. Trees smaller than 5.0 inches in diameter are considered seedlings or saplings and are not assigned volume in the timber inventory.

Exceptionally heavy use over the past 17-year period has also reduced the volume of yellow pine growing stock by 25 percent. Volume increases in pole-size trees have only partially offset the loss of volume in larger pine trees. In hardwood species, the amount of growing stock increased 16 percent, reflecting the larger areas of hardwood stands and less intensive logging activity.

Table C.--Comparison of volume in all live trees 5.0 inches d.b.h. and larger, 1936 and 1953

	NORTH CENTRAL UNIT					
Species group	Growing stock			Cull trees		
	1936[1]	1953	Change	1936[1]	1953	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Yellow pines	993	775	- 22	44	222	+405
Other softwoods	1	2	+100	--	--	--
Hardwoods[2]	551	685	+ 24	178	350	+ 97
All species	1,545	1,462	- 5	222	572	+158
	NORTH UNIT					
Yellow pines	693	489	- 29	56	110	+ 96
Other softwoods	53	42	- 21	2	8	+300
Hardwoods[2]	769	841	+ 9	364	567	+ 56
All species	1,515	1,372	- 9	422	685	+ 62

[1] See footnote 1, table B.

[2] Excludes limb volume of hardwood sawtimber trees.

The amount of wood in low-quality cull trees has approximately doubled during the period. Three-fourths of the cull-tree volume is hardwood and one-fourth is pine. These trees are too crooked, limby, or rotten to be sawed into lumber, but many of them could be utilized in the form of pulpwood, fence posts, hewn crossties, or other products.

Present rate of pine timber cutting exceeds growth.--The downward trend of yellow pine timber volume evident from comparison of the two inventories was still continuing in 1953. In both units the growth of pine sawtimber amounted to 337 million board feet, while timber cutting removed 490 million feet. Logging activity was found to be particularly heavy in the North Central unit, where the volume of pine sawtimber cut exceeded the growth by more than 60 percent. A similar downward trend was also found in the volume of pine growing stock. Hardwood timber growth is greater than the volume cut for both sawtimber and for all trees 5.0 inches and larger.

Table D.--Comparison of net annual growth and timber cut, 1953

Species group	North Central Unit			North Unit		
	Net growth	Timber cut	Loss or gain	Net growth	Timber cut	Loss or gain
SAWTIMBER (In million board feet)						
So. yellow pines	197	324	-127	140	166	- 26
Other softwoods	--	--	--	7	6	+ 1
Hardwoods	103	95	+ 8	128	78	+ 50
All species	300	419	-119	275	250	+ 25
GROWING STOCK (In thousand cords)						
So. yellow pines	1,025	1,303	-278	623	638	- 15
Other softwoods	1	3	- 2	32	16	+ 16
Hardwoods	501	347	+154	565	251	+314
All species	1,527	1,653	-126	1,220	905	+315

Timber growth estimates include the growth on all sound trees of volume size plus the ingrowth created by young trees reaching volume size during the year. The volume of mortality in trees dying from natural causes is deducted to obtain net growth. The amount of timber cut is based on measurement and tally of stumps found on ground sample plots. Stumps of all trees cut during the 3-year period preceding inventory were recorded by species, diameter, and height. These measurements were then converted into volume of trees cut, and the average amount for the 3-year period was taken as the annual estimate.

Table 1.--Gross area[1] by broad use class, 1953

(In thousand acres)

Class of use	North Central Unit	North Unit
Forest land:		
Commercial	3,521.9	3,075.4
Noncommercial:		
Reserved from commercial use	2.5	13.6
Unproductive for timber use	5.3	13.5
Total forest	3,529.7	3,102.5
Nonforest land	2,725.1	1,102.6
Total land area	6,254.8	4,205.1
Total water area[2]	33.8	42.6
All classes	6,288.6	4,247.7

[1] From U. S. Bureau of the Census, 1950.

[2] Includes 36,800 acres of water in both units according to Survey standards of area classification but defined by the Bureau of Census as land.

Table 2.--Ownership of commercial forest land, 1953

(In thousand acres)

Class of ownership	North Central Unit	North Unit
Public land:		
National forest	0.4	635.9
Indian	--	--
Other federal	14.4	34.0
Total federal	14.8	669.9
State	7.5	6.1
County and municipal	6.4	1.1
Total public	28.7	677.1
Private land:		
Farm	3,129.9	1,851.5
Other	363.3	546.8
Total private	3,493.2	2,398.3
All classes	3,521.9	3,075.4

Table 3.--Commercial forest area by forest type, 1953

(In thousand acres)

Forest type	North Central Unit	North Unit
Pine types:		
Longleaf pine	14.8	6.2
Slash pine	0.9	--
Loblolly pine	1,264.5	312.0
Shortleaf pine	831.9	529.2
Virginia pine	7.0	250.7
White pine	--	22.4
Total	2,119.1	1,120.5
Other types:		
Oak-pine	323.0	539.7
Oak-hickory:		
Upland hdwds.	684.8	1,352.5
Scrub oak	13.6	3.5
Oak-gum-cypress	381.4	59.2
Total	1,402.8	1,954.9
All types	3,521.9	3,075.4

Table 4.--Commercial forest area by stand-size class and forest type group, 1953

(In thousand acres)

Stand-size class	North Central Unit		North Unit	
	Pine types	Other types	Pine types	Other types
Large sawtimber stands	41.3	218.1	38.4	268.1
Small sawtimber stands	233.7	170.5	153.8	138.4
Poletimber stands	994.1	566.4	464.4	1,025.1
Seedling & sapling stands	810.7	390.4	438.3	495.8
Nonstocked and other areas	39.3	57.4	25.6	27.5
All stands	2,119.1	1,402.8	1,120.5	1,954.9

Table 5.--Net volume[1] of sawtimber by species, 1953

(In million board feet)

Species	North Central Unit	North Unit
Softwoods:		
Longleaf pine	22.5	12.7
Slash pine	1.1	--
Loblolly pine	873.1	235.2
Shortleaf pine	804.0	822.3
Virginia pine	7.0	251.9
Total	1,707.7	1,322.1
White pine	--	121.3
Hemlock	--	48.6
Cedar	4.9	8.9
Total softwoods	1,712.6	1,500.9
Hardwoods:		
Bl. & tupelo gum	65.7	85.1
Sweetgum	305.2	34.8
Yellow-poplar	315.3	211.3
Soft maple	77.6	32.5
Other soft hardwoods	24.1	14.9
Total	787.9	378.6
White & swamp chestnut oaks	227.6	298.8
Other white oaks	102.6	409.0
No. red oak	45.2	305.2
Other red oaks	282.6	654.0
Hickory	178.9	274.2
Ash	81.5	11.0
Other hard hardwoods	124.5	33.7
Total	1,042.9	1,985.9
Total hardwoods	1,830.8	2,364.5
All species	3,543.4	3,865.4

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[1] Log scale, International 1/4-inch rule.

Table 6.--Net volume[1] of sawtimber by species group and diameter class, 1953

Species group and diameter class	North Central Unit		North Unit	
	Million bd. ft.	Percent	Million bd. ft.	Percent
So. yellow pines:				
10-12 inches	1,163.2	68.1	789.1	59.7
14-18 inches	504.6	29.6	477.5	36.1
20+ inches	39.9	2.3	55.5	4.2
Total	1,707.7	100.0	1,322.1	100.0
Other softwoods:				
10-12 inches	3.2	65.3	44.2	24.7
14-18 inches	1.7	34.7	61.7	34.5
20+ inches	--	--	72.9	40.8
Total	4.9	100.0	178.8	100.0
Hardwoods:				
12 inches	397.2	21.7	616.3	26.1
14-18 inches	930.6	50.8	1,209.2	51.1
20+ inches	503.0	27.5	539.0	22.8
Total	1,830.8	100.0	2,364.5	100.0

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume[1] of all timber by species, 1953

GROWING STOCK

Species	North Central Unit		North Unit	
	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.
Softwoods:				
Longleaf pine	97	7.1	48	3.4
Slash pine	9	0.6	--	--
Loblolly pine	5,609	389.6	1,250	87.7
Shortleaf pine	5,512	375.6	4,330	303.4
Virginia pine	32	2.2	1,360	95.0
Total	11,259	775.1	6,988	489.5
White pine	--	--	375	31.1
Hemlock	--	--	90	8.8
Cedar	20	1.5	34	2.4
Total softwoods	11,279	776.6	7,487	531.8
Hardwoods:				
Bl. & tupelo gum	312	23.4	329	24.8
Sweetgum	1,529	112.6	190	14.4
Yellow-poplar	1,401	103.9	819	61.3
Soft maple	434	31.8	230	16.4
Other soft hardwoods	171	12.5	60	4.5
Total	3,847	284.2	1,628	121.4
White & swamp chestnut oak	1,058	78.9	1,763	127.8
Other white oaks	581	42.1	2,254	162.5
No. red oak	246	17.9	855	67.0
Other red oaks	1,457	106.9	3,209	234.9
Hickory	979	72.1	1,291	93.9
Ash	473	34.5	153	10.6
Dogwood, persimmon	109	6.7	74	4.5
Other hard hardwoods	559	41.9	257	17.9
Total	5,462	401.0	9,856	719.1
Total hardwoods	9,309	685.2	11,484	840.5
All species	20,588	1,461.8	18,971	1,372.3

OTHER MATERIAL

Species	North Central Unit		North Unit	
	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.
Sound culls				
Softwoods	3,168	222.8	1,650	118.1
Hardwoods	4,734	338.9	7,376	522.4
Rotten culls	145	10.7	557	43.9
Hardwood limbs	1,426	109.8	2,028	149.1
Total other material	9,473	682.2	11,611	833.5

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[1] Volume in cords includes sound wood and bark. Volume in cubic feet includes sound wood only.

Table 8.--Net volume[1] of growing stock by species group and diameter class, 1953

Species group and diameter class	North Central Unit		North Unit	
	Thousand cords	Percent	Thousand cords	Percent
So. yellow pines:				
6-8 inches	6,099	54.2	3,281	46.9
10-12 inches	3,765	33.4	2,403	34.4
14-18 inches	1,304	11.6	1,181	16.9
20+ inches	91	0.8	123	1.8
Total	11,259	100.0	6,988	100.0
Other softwoods:				
6-8 inches	8	40.0	105	21.0
10-12 inches	9	45.0	123	24.6
14-18 inches	3	15.0	133	26.7
20+ inches	--	--	138	27.7
Total	20	100.0	499	100.0
Soft hardwoods:				
6-8 inches	905	23.5	363	22.3
10-12 inches	1,339	34.8	490	30.1
14-18 inches	1,232	32.0	610	37.5
20+ inches	371	9.7	165	10.1
Total	3,847	100.0	1,628	100.0
Hard hardwoods:				
6-8 inches	1,533	28.1	2,761	28.0
10-12 inches	1,712	31.3	3,447	35.0
14-18 inches	1,337	24.5	2,551	25.9
20+ inches	880	16.1	1,097	11.1
Total	5,462	100.0	9,856	100.0

[1] Sound wood and bark.

Table 9.--Net annual growth of sawtimber by species group, 1953

(In million board feet)

Species group	North Central Unit	North Unit
So. yellow pines	196.9	139.6
Other softwoods	0.4	7.4
Soft hardwoods	49.1	23.7
Hard hardwoods	53.7	104.8
All species	300.1	275.5

Table 10.--Net annual growth of growing stock by species group, 1953

Species group	North Central Unit		North Unit	
	Thousand cords	Million cu. ft	Thousand cords	Million cu. ft.
So. yellow pines	1,025	65.2	623	40.0
Other softwoods	1	0.1	32	2.4
Soft hardwoods	253	17.3	104	7.1
Hard hardwoods	248	16.9	461	30.7
All species	1,527	99.5	1,220	80.2

Table 11.--Annual net growth percentages by species group, 1953

Species group	North Central Unit		North Unit	
	Sawtimber[1]	Growing stock[2]	Sawtimber[1]	Growing stock[2]
So. yellow pines	11.53	8.41	10.55	8.16
Other softwoods	8.25	7.35	4.15	5.71
Soft hardwoods	6.23	6.08	6.26	5.87
Hard hardwoods	5.15	4.21	5.28	4.27
All species	8.47	6.80	7.13	5.84

[1] For use with board-foot volumes.

[2] For use with cord or cubic-foot volumes.

Table 12.--Average annual timber cut from sawtimber trees by species group

(In million board feet)

Species group	North Central Unit	North Unit
So. yellow pines	324.0	166.3
Other softwoods	0.3	6.1
Soft hardwoods	67.1	27.5
Hard hardwoods	27.5	50.8
All species	418.9	250.7

Table 13.--Average annual timber cut from growing stock by species group and tree-size class

(In thousand cords)

Species group	North Central Unit			North Unit		
	Pole trees	Sawtimber trees	All trees	Pole trees	Sawtimber trees	All trees
So. yellow pines	288	1,015	1,303	130	508	638
Other softwoods	2	1	3	--	16	16
Soft hardwoods	29	174	203	4	70	74
Hard hardwoods	67	77	144	40	137	177
All species	386	1,267	1,653	174	731	905

Table 14.--Net change in sawtimber volume by species group, 1953

(In thousand board feet)

NORTH CENTRAL UNIT

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1953	1,707,638	4,924	787,895	1,042,912	3,543,369
Total growth	208,620	456	54,854	60,953	324,883
Mortality	11,756	50	5,745	7,211	24,762
Net growth	196,864	406	49,109	53,742	300,121
Timber cut	323,966	300	67,076	27,551	418,893
Loss or gain	-127,102	+106	-17,967	+26,191	-118,772
Net volume, Jan. 1, 1954	1,580,536	5,030	769,928	1,069,103	3,424,597
Percent change	-7.4	+2.2	-2.3	+2.5	-3.4

NORTH UNIT

Net volume, Jan. 1, 1953	1,322,078	178,795	378,617	1,985,940	3,865,430
Total growth	148,483	8,429	26,269	120,143	303,324
Mortality	8,951	1,001	2,549	15,329	27,830
Net growth	139,532	7,428	23,720	104,814	275,494
Timber cut	166,279	6,125	27,507	50,796	250,707
Loss or gain	-26,747	+1,303	-3,787	+54,018	+24,787
Net volume, Jan. 1, 1954	1,295,331	180,098	374,830	2,039,958	3,890,217
Percent change	-2.0	+0.7	-1.0	+2.7	40.6

Table 15.--Net change in growing stock by species group, 1953

(In million cubic feet)

NORTH CENTRAL UNIT

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1953	775.1	1.5	284.2	401.0	1,461.8
Total growth	73.2	0.1	19.4	19.6	112.3
Mortality	8.0	--	2.1	2.7	12.8
Net growth	65.2	0.1	17.3	16.9	99.5
Timber cut	96.8	0.2	16.0	10.5	123.5
Loss or gain	-31.6	-0.1	+1.3	+6.4	-24.0
Net volume, Jan. 1, 1954	743.5	1.4	285.5	407.4	1,437.8
Percent change	-4.1	-6.7	+0.5	+1.6	-1.6

NORTH UNIT

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1953	489.5	42.3	121.4	719.1	1,372.3
Total growth	44.8	2.7	8.1	35.8	91.4
Mortality	4.8	0.3	1.0	5.1	11.2
Net growth	40.0	2.4	7.1	30.7	80.2
Timber cut	47.3	1.3	5.9	13.4	67.9
Loss or gain	-7.3	+1.1	+1.2	+17.3	+12.3
Net volume, Jan. 1, 1954	482.2	43.4	122.6	736.4	1,384.6
Percent change	-1.5	+2.6	+1.0	+2.4	+ 0.9

Table 16.--Net change in growing stock by species group, 1953

(In thousand cords)

NORTH CENTRAL UNIT

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1953	11,259	20	3,847	5,462	20,588
Total growth	1,146	1	283	283	1,713
Mortality	121	--	30	35	186
Net growth	1,025	1	253	248	1,527
Timber cut	1,303	3	203	144	1,653
Loss or gain	-278	-2	+50	+104	-126
Net volume, Jan. 1, 1954	10,981	18	3,897	5,566	20,462
Percent change	-2.5	-10.0	+1.3	+1.9	-0.6
NORTH UNIT					
Net volume, Jan. 1, 1953	6,988	499	1,628	9,856	18,971
Total growth	694	35	119	531	1,379
Mortality	71	3	15	70	159
Net growth	623	32	104	461	1,220
Timber cut	638	16	74	177	905
Loss or gain	-15	+16	+30	+284	+315
Net volume, Jan. 1, 1954	6,973	515	1,658	10,140	19,286
Percent change	-0.2	+3.2	+1.8	+2.9	+1.7

Table 17.--County area by broad use class, 1953

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Banks	147.8	55.4	--	--	92.4	62.5
Barrow	109.4	57.3	0.4	--	51.7	47.4
Bartow	304.6	106.0	9.6	--	189.0	64.1
Carroll	316.8	163.3	0.7	--	152.8	48.3
Catoosa	106.9	40.8	0.2	4.1	61.8	57.9
Chattooga	202.9	74.6	--	(2/)	128.3	63.2
Cherokee	273.9	73.4	9.9	--	190.6	72.2
Clarke	80.0	45.7	0.2	--	34.1	42.7
Clayton	95.4	51.6	0.1	--	43.7	45.9
Cobb	222.7	114.6	1.8	2.2	104.1	47.1
Coweta	283.5	113.6	0.5	--	169.4	59.9
Dade	105.6	18.8	--	3.2	83.6	79.2
Dawson	136.3	23.9	--	0.2	112.2	82.3
De Kalb	172.2	87.7	0.5	--	84.0	48.9
Douglas	129.3	44.2	1.0	--	84.1	65.5
Elbert	233.6	73.4	15.0	--	145.2	66.4
Fannin	256.0	51.7	3.8	1.8	198.7	78.8
Fayette	127.4	60.2	0.3	--	66.9	52.6
Floyd	329.0	119.0	2.9	0.1	207.0	63.5
Forsyth	155.5	58.0	0.6	--	96.9	62.6
Franklin	172.2	94.3	0.3	--	77.6	45.1
Fulton	339.8	175.0	2.2	--	162.6	48.2
Gilmer	281.0	28.4	0.2	0.5	251.9	89.7
Gordon	229.1	112.6	1.7	0.1	114.7	50.4
Gwinnett	279.7	136.5	0.2	--	143.0	51.2
Habersham	181.1	49.5	0.7	2.7	128.2	71.1
Hall	272.6	100.4	1.1	--	171.1	63.0
Haralson	182.4	59.1	0.2	--	123.1	67.6
Hart	165.1	93.3	1.5	--	70.3	43.0
Heard	193.3	44.5	1.5	3.6	143.7	74.9
Henry	211.8	113.3	0.1	--	98.4	46.5
Jackson	215.7	116.1	--	--	99.6	46.2
Lumpkin	186.9	20.3	--	2.3	164.3	87.9
Madison	179.9	90.0	0.3	--	89.6	49.9
Meriwether	319.4	85.6	0.4	--	233.4	73.2
Murray	218.9	51.2	--	0.5	167.2	76.4
Newton	174.7	70.8	1.2	--	102.7	59.2
Oconee	119.0	65.0	0.1	--	53.9	45.3
Oglethorpe	278.4	102.2	0.2	--	176.0	63.3
Paulding	203.5	59.8	0.1	--	143.6	70.6
Pickens	144.0	30.8	0.4	--	112.8	78.6
Polk	199.7	88.2	0.1	--	111.4	55.8
Rabun	240.0	23.7	4.3	3.4	208.6	88.5
Rockdale	81.9	38.2	0.2	2.0	41.5	50.8
Spalding	128.6	65.3	0.1	--	63.2	49.2
Stephens	115.2	37.3	0.8	1.6	75.5	66.0
Towns	110.1	16.5	3.9	1.3	88.4	83.2
Troup	286.1	78.5	2.7	--	204.9	72.3
Union	204.2	42.7	4.0	2.2	155.3	77.6
Walker	286.7	87.3	--	1.4	198.0	69.1
Walton	211.2	124.0	0.2	--	87.0	41.2
White	155.5	25.7	0.2	1.7	127.9	82.4
Whitfield	179.8	68.4	--	(2/)	111.4	62.0
Total	10,536.3	3,827.7	76.4	34.9	6,597.3	63.1

[1] Gross area from Bureau of the Census, 1950.

Table 18.--Ownership of commercial forest land by county, 1953

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Banks	91.7	99.2	0.4	--	0.3	--	0.7	0.8
Barrow	49.0	95.9	--	--	2.0	0.1	2.1	4.1
Bartow	183.0	96.8	--	6.0	--	(1/)	6.0	3.2
Carroll	122.7	99.9	--	--	--	0.1	0.1	0.1
Catoosa	60.4	97.7	--	1.4	--	(1/)	1.4	2.3
Chattooga	115.9	90.3	12.4	--	--	(1/)	12.4	9.7
Cherokee	175.8	92.2	--	14.7	--	0.1	14.8	7.8
Clarke	32.4	95.0	--	--	1.6	0.1	1.7	5.0
Clayton	43.5	99.5	--	--	--	0.2	0.2	0.5
Cobb	100.6	96.6	--	3.3	--	0.2	3.5	3.4
Coweta	168.4	99.4	--	--	--	1.0	1.0	0.6
Dade	82.1	98.2	--	--	1.5	--	1.5	1.8
Dawson	106.9	95.3	5.0	--	0.3	--	5.3	4.7
De Kalb	83.4	99.3	--	0.3	--	0.3	0.6	0.7
Douglas	84.0	99.9	--	--	--	0.1	0.1	0.1
Elbert	140.8	97.0	--	4.3	--	0.1	4.4	3.0
Fannin	104.9	52.8	93.4	0.4	--	--	93.8	47.2
Fayette	66.8	99.9	--	--	--	0.1	0.1	0.1
Floyd	200.1	96.7	6.3	--	0.4	0.2	6.9	3.3
Forsyth	96.3	99.4	--	0.6	--	--	0.6	0.6
Franklin	77.5	99.9	--	--	(1/)	0.1	0.1	0.1
Fulton	160.7	98.8	--	--	0.1	1.8	1.9	1.2
Gilmer	228.9	90.9	22.9	--	--	0.1	23.0	9.1
Gordon	107.8	94.0	6.8	--	(1/)	0.1	6.9	6.0
Gwinnett	142.0	99.3	--	0.9	0.1	--	1.0	0.7
Habersham	89.3	69.7	38.7	--	0.2	(1/)	38.9	30.3
Hall	170.7	99.8	--	0.3	--	0.1	0.4	0.2
Haralson	123.1	100.0	--	--	--	(1/)	(1/)	--
Hart	70.3	100.0	--	--	--	(1/)	(1/)	--
Heard	143.7	100.0	--	--	--	--	--	--
Henry	98.4	100.0	--	--	--	(1/)	(1/)	--
Jackson	99.1	99.5	--	--	0.5	(1/)	0.5	0.5
Lumpkin	109.9	66.9	54.1	--	0.3	(1/)	54.4	33.1
Madison	89.6	100.0	--	--	--	(1/)	(1/)	--
Meriwether	229.2	98.2	--	--	2.6	1.6	4.2	1.8
Murray	130.3	77.9	34.9	--	1.9	0.1	36.9	22.1
Newton	102.6	99.9	--	--	--	0.1	0.1	0.1
Oconee	52.8	98.0	--	1.1	--	--	1.1	2.0
Oglethorpe	172.4	98.0	--	3.6	--	(1/)	3.6	2.0
Paulding	143.5	99.9	--	--	--	0.1	0.1	0.1
Pickens	112.8	100.0	--	--	--	(1/)	(1/)	--
Polk	111.3	99.9	--	--	--	0.1	0.1	0.1
Rabun	69.9	33.5	137.6	--	1.1	--	138.7	66.5
Rockdale	41.5	100.0	--	--	--	(1/)	(1/)	--
Spalding	62.9	99.5	--	--	0.2	0.1	0.3	0.5
Stephens	55.5	73.5	19.9	--	(1/)	0.1	20.0	26.5
Towns	35.3	39.9	52.4	0.7	--	--	53.1	60.1
Troup	204.8	100.0	--	--	--	0.1	0.1	(2/)
Union	66.3	42.7	86.4	2.5	0.1	--	89.0	57.3
Walker	182.5	92.2	15.1	--	0.2	0.2	15.5	7.8
Walton	86.9	99.9	--	--	0.1	(1/)	0.1	0.1
White	88.8	69.4	39.0	--	0.1	--	39.1	30.6
Whitfield	91.9	82.5	11.0	8.3	--	0.2	19.5	17.5
Total	5,891.5	89.3	636.3	48.4	13.6	7.5	705.8	10.7

1/ Less than 50 acres.

2/ Less than 0.05 percent.

Table 19.--Net volume[1] of sawtimber by county and species group, 1953

(In million board feet)

County	Softwoods[2]	Gum, maple and yellow-poplar[3]	Other hardwoods	All species
Banks	45.9	11.1	27.5	84.5
Barrow	42.6	10.2	7.8	60.6
Bartow	78.1	--	39.6	117.7
Carroll	76.4	14.8	52.2	143.4
Catoosa	20.9	2.4	34.3	57.6
Chattooga	53.3	8.9	30.3	92.5
Cherokee	30.6	26.8	106.2	163.6
Clarke	21.2	17.6	11.4	50.2
Clayton	34.7	11.8	12.9	59.4
Cobb	80.1	14.0	9.3	103.4
Coweta	49.0	30.7	22.7	102.4
Dade	10.3	29.2	72.4	111.9
Dawson	55.2	2.3	50.1	107.6
De Kalb	107.5	5.7	61.3	174.5
Douglas	17.8	31.4	17.2	66.4
Elbert	28.9	25.5	74.7	129.1
Fannin	27.6	24.5	202.6	254.7
Fayette	22.9	31.1	15.1	69.1
Floyd	138.3	19.8	45.7	203.8
Forsyth	21.4	--	6.0	27.4
Franklin	39.2	20.4	37.5	97.1
Fulton	142.8	23.7	87.1	253.6
Gilmer	49.0	61.9	221.4	332.3
Gordon	36.9	2.2	20.3	59.4
Gwinnett	49.7	47.5	35.2	132.4
Habersham	133.0	16.7	100.7	250.4
Hall	104.4	9.4	47.0	160.8
Haralson	37.5	70.6	38.6	146.7
Hart	24.6	9.6	10.6	44.8
Heard	60.1	30.8	15.4	106.3
Henry	58.8	9.4	56.3	124.5
Jackson	36.4	10.7	6.2	53.3
Lumpkin	60.5	7.5	98.6	166.6
Madison	50.1	69.5	52.5	172.1
Meriwether	66.1	44.5	146.3	256.9
Murray	88.2	5.6	78.4	172.2
Newton	68.2	23.7	58.9	150.8
Oconee	55.2	15.3	8.0	78.5
Oglethorpe	116.1	49.5	24.1	189.7
Paulding	50.3	23.0	25.9	99.2
Pickens	49.5	17.7	28.6	95.8
Polk	26.2	2.9	23.1	52.2
Rabun	322.0	61.2	213.4	596.6
Rockdale	6.9	14.5	2.3	23.7
Spalding	30.1	25.5	16.0	71.6
Stephens	60.8	3.9	53.5	118.2
Towns	14.3	20.6	148.2	183.1
Troup	91.3	57.0	17.0	165.3
Union	88.7	25.8	248.9	363.4
Walker	79.1	20.4	86.6	186.1
Walton	50.2	26.5	16.8	93.5
White	47.6	15.0	80.9	143.5
Whitfield	57.0	6.2	25.2	88.4
Total	3,213.5	1,166.5	3,028.8	7,408.8

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, hemlock, and cedar.

[3] Includes other soft-textured hardwoods.

Table 20.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1953

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Banks	357	35	--	--	110	19	87	49	657
Barrow	143	60	--	--	22	17	42	13	297
Bartow	345	66	--	--	--	--	100	77	588
Carroll	383	53	--	--	83	33	149	108	809
Catoosa	75	18	2	3	5	5	81	53	242
Chattooga	279	53	--	--	27	21	156	60	596
Cherokee	206	39	--	--	20	70	456	171	962
Clarke	113	16	--	--	44	34	26	26	259
Clayton	141	40	--	--	78	22	31	28	340
Cobb	281	92	--	--	7	31	51	17	479
Coweta	376	29	--	--	67	75	55	51	653
Dade	58	6	14	--	27	63	266	141	575
Dawson	151	83	--	--	--	6	88	71	399
De Kalb	290	141	--	--	19	12	110	136	708
Douglas	190	--	--	--	69	59	138	39	495
Elbert	361	14	4	3	96	54	135	172	839
Fannin	121	15	8	7	92	56	492	387	1,178
Fayette	110	26	--	--	95	60	61	37	389
Floyd	411	183	--	--	14	41	43	104	796
Forsyth	139	4	--	--	--	--	28	10	181
Franklin	190	24	1	--	8	48	121	83	475
Fulton	446	215	--	--	88	47	248	177	1,221
Gilmer	324	7	45	8	78	131	914	379	1,886
Gordon	224	26	--	--	79	--	41	36	406
Gwinnett	212	47	--	--	20	121	47	84	531
Habersham	334	146	--	--	49	31	365	187	1,112
Hall	479	60	--	--	41	23	256	105	964
Haralson	268	12	--	--	143	153	163	71	810
Hart	169	15	--	--	72	20	98	25	399
Heard	318	64	--	--	85	49	135	27	678
Henry	361	27	--	--	15	18	115	121	657
Jackson	210	22	4	--	24	22	6	13	301
Lumpkin	334	9	30	61	33	10	393	167	1,037
Madison	244	35	--	--	137	124	101	125	766
Meriwether	524	65	--	--	202	74	301	301	1,467
Murray	524	38	13	33	6	10	325	129	1,078
Newton	278	49	--	--	42	53	99	143	664
Oconee	230	57	5	--	25	31	55	18	421
Oglethorpe	839	64	--	--	125	98	74	50	1,250
Paulding	357	15	--	--	137	39	131	30	709
Pickens	265	55	--	--	26	25	50	52	473
Polk	280	10	--	--	3	5	174	40	512
Rabun	540	322	76	105	80	115	622	428	2,288
Rockdale	78	4	1	--	27	31	20	3	164
Spalding	198	20	--	--	71	52	23	35	399
Stephens	252	45	4	--	20	8	149	94	572
Towns	73	--	--	--	38	48	274	299	732
Troup	1,022	31	2	--	206	123	115	38	1,537
Union	222	44	14	54	77	53	358	496	1,318
Walker	405	62	11	--	79	35	571	120	1,283
Walton	277	49	--	--	83	56	50	42	557
White	221	56	11	--	41	35	240	166	770
Whitfield	320	31	--	--	62	12	224	31	680
Total	15,548	2,699	245	274	3,097	2,378	9,453	5,865	39,559

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[1] Sound wood and bark.

Table 20.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1953 (cont'd.)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Banks	55	13	--	--	16	9	43	21	157
Barrow	43	12	--	--	35	16	36	16	158
Bartow	183	8	--	--	12	--	318	80	601
Carroll	69	24	--	--	52	37	190	65	437
Catoosa	11	2	--	--	2	3	29	43	90
Chattooga	65	63	--	--	52	32	356	184	752
Cherokee	57	--	--	--	6	34	58	62	217
Clarke	34	4	--	--	9	17	14	10	88
Clayton	60	23	--	--	14	24	34	22	177
Cobb	39	20	--	--	23	36	68	22	208
Coweta	167	59	--	--	72	75	68	35	476
Dade	11	--	--	--	63	32	139	149	394
Dawson	55	32	--	17	52	9	281	137	583
De Kalb	109	36	--	--	34	11	88	93	371
Douglas	40	3	--	--	71	42	155	50	361
Elbert	149	--	--	--	5	30	34	59	277
Fannin	18	12	4	--	68	49	277	285	713
Fayette	14	2	--	--	52	67	34	26	195
Floyd	160	32	--	--	27	45	266	238	768
Forsyth	131	25	--	--	--	--	100	66	322
Franklin	9	13	--	--	22	16	53	56	169
Fulton	149	10	--	--	126	124	131	196	736
Gilmer	29	7	11	18	65	74	554	415	1,173
Gordon	132	16	--	--	56	10	189	66	469
Gwinnett	320	54	--	--	70	164	59	46	713
Habersham	10	4	--	--	23	20	243	114	414
Hall	86	25	--	--	9	5	102	73	300
Haralson	31	5	--	--	63	68	151	46	364
Hart	4	--	--	--	13	4	18	22	61
Heard	68	11	--	--	44	27	56	130	336
Henry	47	8	--	--	24	15	23	60	177
Jackson	118	37	--	--	42	23	23	31	274
Lumpkin	66	28	--	--	83	2	151	161	491
Madison	45	6	--	--	80	85	44	40	300
Meriwether	110	48	--	--	63	34	164	118	537
Murray	115	23	--	--	68	18	244	170	638
Newton	70	21	--	--	16	15	41	62	225
Oconee	29	5	--	--	33	18	1	13	99
Oglethorpe	96	29	--	--	140	62	93	41	461
Paulding	173	--	--	--	83	10	99	54	419
Pickens	185	23	2	4	24	15	219	85	557
Polk	24	5	--	--	9	1	132	38	209
Rabun	46	8	--	--	48	40	367	273	782
Rockdale	23	4	--	--	1	7	29	4	68
Spalding	64	11	--	--	25	11	10	27	148
Stephens	33	19	--	--	17	2	84	79	234
Towns	--	--	--	--	22	30	201	263	516
Troup	106	18	--	--	60	58	93	8	343
Union	22	2	19	19	50	33	340	289	774
Walker	35	6	--	--	67	19	361	248	736
Walton	123	32	--	--	34	21	72	25	307
White	11	--	2	--	14	46	176	182	431
Whitfield	25	--	--	--	33	24	184	12	278
Total	3,874	848	38	58	2,192	1,669	7,295	5,110	21,084

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[1] Sound wood and bark.

Table 21.--Average annual volume of sawtimber cut by county[1] and species group

(In thousand board feet)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Banks	6,303	--	796	535	7,634
Barrow	4,857	--	1,202	842	6,901
Bartow	1,557	--	--	1,384	2,941
Carroll	12,340	--	394	897	13,631
Catoosa	2,626	--	207	445	3,278
Chattooga	5,026	--	--	--	5,026
Cherokee	29,027	--	7,115	6,214	42,356
Clarke	6,558	--	--	--	6,558
Clayton	4,047	--	--	--	4,047
Cobb	7,926	--	--	--	7,926
Coweta	31,689	--	5,165	1,858	38,712
Dade	5,059	3,124	6,325	2,584	17,092
Dawson	5,276	--	--	990	6,266
De Kalb	7,345	--	--	--	7,345
Douglas	1,526	--	3,126	636	5,288
Elbert	11,565	--	1,273	697	13,535
Fannin	1,529	--	--	9,024	10,553
Fayette	6,620	--	1,507	--	8,127
Floyd	14,632	--	670	1,609	16,911
Forsytn	--	--	--	2,114	2,114
Franklin	7,619	--	--	2,429	10,048
Fulton	9,533	--	1,702	478	11,713
Gilmer	1,463	356	9,930	7,055	18,804
Gordon	8,431	--	--	--	8,431
Gwinnett	11,378	--	885	--	12,263
Habersham	8,947	--	--	511	9,458
Hall	16,619	--	731	3,141	20,491
Haralson	9,914	--	--	2,543	12,457
Hart	898	--	--	269	1,167
Heard	13,448	--	908	3,050	17,406
Henry	22,473	--	5,886	558	28,917
Jackson	12,157	--	443	--	12,600
Lumpkin	9,244	--	1,540	4,742	15,526
Madison	2,874	300	--	1,153	4,327
Meriwether	25,674	--	21,540	954	48,168
Murray	23,678	--	--	1,671	25,349
Newton	10,922	--	1,605	3,577	16,104
Oconee	5,132	--	3,963	292	9,387
Oglethorpe	8,441	--	--	--	8,441
Paulding	7,749	--	6,048	--	13,797
Pickens	4,855	--	--	--	4,855
Polk	8,436	--	--	655	9,091
Rabun	6,536	2,645	1,720	4,114	15,015
Rockdale	8,987	--	--	539	9,526
Spalding	22,559	--	4,061	--	26,620
Stephens	2,163	--	--	2,250	4,413
Towns	--	--	--	3,157	3,157
Troup	7,937	--	1,531	334	9,802
Union	5,552	--	--	1,530	7,082
Walker	20,480	--	--	2,012	22,492
Walton	10,440	--	4,310	--	14,750
White	1,845	--	--	1,504	3,349
Whitfield	8,353	--	--	--	8,353
Total	490,245	6,425	94,583	78,347	669,600

1/ Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 22.--Average annual volume of growing stock cut by county[1/] and species group

(In thousand cords)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Banks	36	--	3	2	41
Barrow	15	--	3	2	20
Bartow	9	--	--	4	13
Carroll	47	--	4	17	68
Catoosa	16	--	1	2	19
Chattooga	18	--	--	9	27
Cherokee	113	--	20	21	154
Clarke	22	--	--	--	22
Clayton	14	--	--	--	14
Cobb	33	--	--	--	33
Coweta	118	--	25	5	148
Dade	21	8	15	7	51
Dawson	21	--	1	4	26
De Kalb	25	--	--	--	25
Douglas	6	--	8	2	16
Elbert	51	--	10	19	80
Fannin	7	--	--	24	31
Fayette	25	--	6	--	31
Floyd	55	--	2	5	62
Forsyth	1	--	--	24	25
Franklin	31	--	--	9	40
Fulton	43	--	5	2	50
Gilmer	8	2	24	21	55
Gordon	31	--	--	--	31
Gwinnett	46	--	3	--	49
Habersham	28	--	--	2	30
Hall	83	--	2	9	94
Haralson	36	--	--	9	45
Hart	10	--	--	2	12
Heard	49	--	3	8	60
Henry	78	--	15	2	95
Jackson	49	1	1	--	51
Lumpkin	35	--	4	18	57
Madison	19	1	--	4	24
Meriwether	81	--	56	12	149
Murray	90	--	--	5	95
Newton	47	1	4	9	61
Oconee	20	--	11	1	32
Oglethorpe	51	--	--	--	51
Paulding	36	--	15	--	51
Pickens	32	--	--	--	32
Polk	25	--	--	2	27
Rabun	22	6	6	11	45
Rockdale	44	--	--	2	46
Spalding	78	--	10	--	88
Stephens	8	--	--	10	18
Towns	--	--	--	7	7
Troup	40	--	4	1	45
Union	21	--	1	12	34
Walker	70	--	--	8	78
Walton	44	--	15	1	60
White	8	--	--	7	15
Whitfield	25	--	--	--	25
Total	1,941	19	277	321	2,558

1/ Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

> Pine types: Forests in which 50 percent or more of the stand is in pine species. Plurality of volume or number of trees is used to determine the specific type.
>
> Oak-pine type: Forests in which 50 percent or more of the stand is hardwood, usually upland oaks, but in which southern yellow pines make up 25-49 percent of the stand.

Oak-hickory type:

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, cypress, elm, maple, and associated species, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes longleaf, slash, loblolly, Virginia, and shortleaf pine.

Other softwoods: White pine, hemlock, and eastern redcedar.

Soft-textured hardwoods: Blackgum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, cucumber, and willow.

Hard-textured hardwoods: All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of all sawtimber-size hardwoods is shown separately.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 73 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The estimated volume of net growth includes the growth on the present growing stock, the growth on trees which died or were cut during the year, and the ingrowth resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on growth of sound trees. Growth of "other material" is not included.

> In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.
>
> In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the sawlog portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger.

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) nonsampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The nonsampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

The sampling intensity of the 1953 survey was sufficient to provide estimates of commercial forest area and timber volumes for each survey unit as given below. The probabilities are two out of three that the total estimates shown in the tables do not differ from the actual totals by more than the sampling error indicated.

Survey unit	Forest area	Board-foot volume	Cubic-foot volume
North Central	±1.3	±3.7	±2.8
North	±1.0	±5.5	±4.2

The standard error of volume in terms of standard cords was not computed, but it should be approximately the same as the error of cubic volume.

Use of county data.--The tables showing area and timber volumes by county are included to permit grouping of the data in any desired combinations. The survey was designed so that the number of sample plots taken in each county would provide an estimate of the timber volume in cubic feet which would not exceed ±15 percent. The actual range of error of the cubic volume estimates by county is from ±14.0 percent to ±15.4 percent. The errors of board-foot volume estimates by county range from ±18.6 percent to ±23.4 percent, and of forest area from ±2.6 percent to ±12.3 percent.

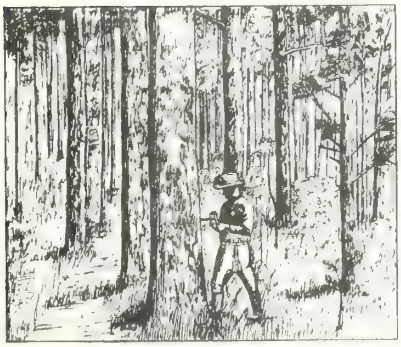
In spite of the accuracy limit set on volume estimates by county, comparison of individual county statistics may be subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability and make the combined estimates sufficiently accurate for general use. For example, grouping the growing stock volume data for four counties with errors ranging from 14 to 15 percent resulted in a total volume estimate with only 8 percent error. Where estimates of timber volume cut by county are used, the data for at least ten counties should be combined.

HOW THE FOREST INVENTORY IS MADE

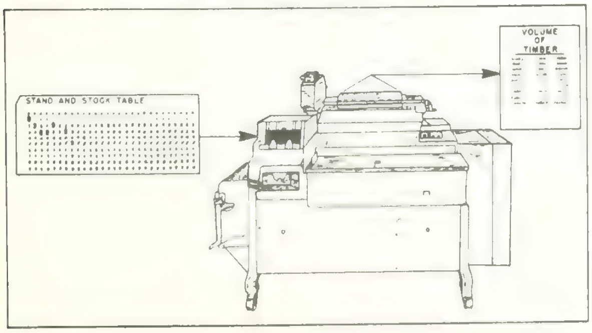
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia

No. 22 - Southern Forests as a Source of Pulpwood

No. 23 - 1946 Pulpwood Production by County in the Southeast

No. 24 - Southern Pulpwood Production and the Timber Supply

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina

No. 26 - 1946 Commodity Drain by County from South Carolina Forests

No. 27 - 1947 Pulpwood Production by County in the Southeast

No. 28 - South Carolina's Forest Resources, 1947

No. 29 - 1948 Pulpwood Production by County in the Southeast

No. 30 - Forest Resources of Northeast Florida, 1949

No. 31 - Forest Resources of Central Florida, 1949

No. 32 - Forest Resources of Northwest Florida, 1949

No. 33 - Forest Resources of South Florida, 1949

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948

No. 35 - 1949 Pulpwood Production in the South (Out of print)

No. 36 - Forest Statistics for Florida, 1949

No. 37 - Forest Statistics for Southwest Georgia, 1951

No. 38 - 1951 Pulpwood Production in the South

No. 39 - Forest Statistics for Southeast Georgia, 1952

No. 40 - Forest Statistics for Central Georgia, 1952

No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952

OTHER REPORTS

Pulpwood Production in the South, 1950. Forest Survey Release No. 69

1952 Pulpwood Production in the South. Forest Survey Release No. 72

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3

The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

Agriculture--Asheville

FORREST SURVEY RELEASE NO. 43 JULY 1954

1953 PULPWOOD PRODUCTION IN THE SOUTH

by

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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, N. C.
and
SOUTHERN FOREST EXPERIMENT STATION
NEW ORLEANS, LA.
in cooperation with
SOUTHERN PULPWOOD CONSERVATION ASSOCIATION
ATLANTA, GA.

PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act. The Southeastern Forest Experiment Station, Asheville, North Carolina, is responsible for the work in Virginia, North Carolina, South Carolina, Georgia, and Florida. The Southern Forest Experiment Station, New Orleans, Louisiana, directs the work in Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

ACKNOWLEDGMENT

The statistics presented herein are based upon reports furnished by the wood procurement officials representing 65 mills located in, or drawing wood from the South. Reports showed either production by county or by shipping points which were used to assign production to counties. County data are approximate, but totals for small groups of counties should have little error.

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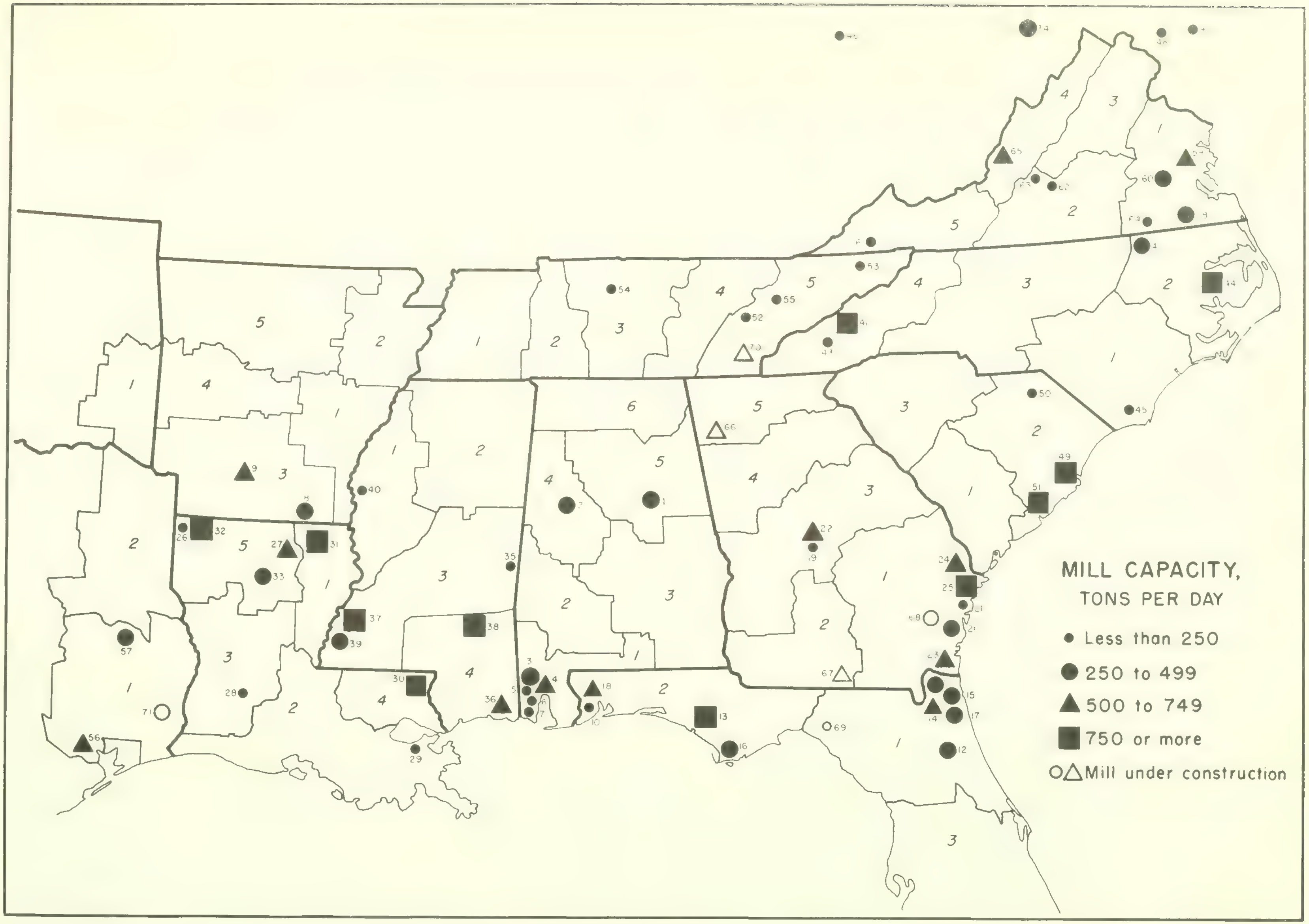

Figure 1.--Pulp mills drawing wood from the South, 1953. Numbered areas are Forest Survey units. Small numbers at mill locations correspond to numbers in tables 16 and 17.

PULPWOOD PRODUCTION IN THE SOUTH

In 1953 pulpwood production in the South amounted to 16,127,000 cords, 61 percent of the total 1953 receipts of domestic pulpwood at all mills in the United States. Southern production in 1953 was 10.7 percent more than in 1952 and 14.7 percent more than in 1951. The harvest of pine pulpwood was 14,147,600 cords, or 9.7 percent more than in 1952. Hardwood production, exclusive of dead chestnut, amounted to 1,918,300 cords, 13.4 percent more than in 1952. The trend is toward a gradual increase in the proportion of hardwood in the total pulpwood cut. Only 9 percent of the pulpwood cut in 1950 was hardwood; in 1953 hardwood amounted to 12 percent. These percents do not include dead chestnut used for pulp, which totaled only 61,100 cords in 1953.

Georgia led the South in production (fig. 2), accounting for 18 percent of the South's and 11 percent of the Nation's cut. All southern states except Tennessee harvested more pulpwood than in 1952 (table 1). The largest increase, 366,000 cords, was in Georgia.

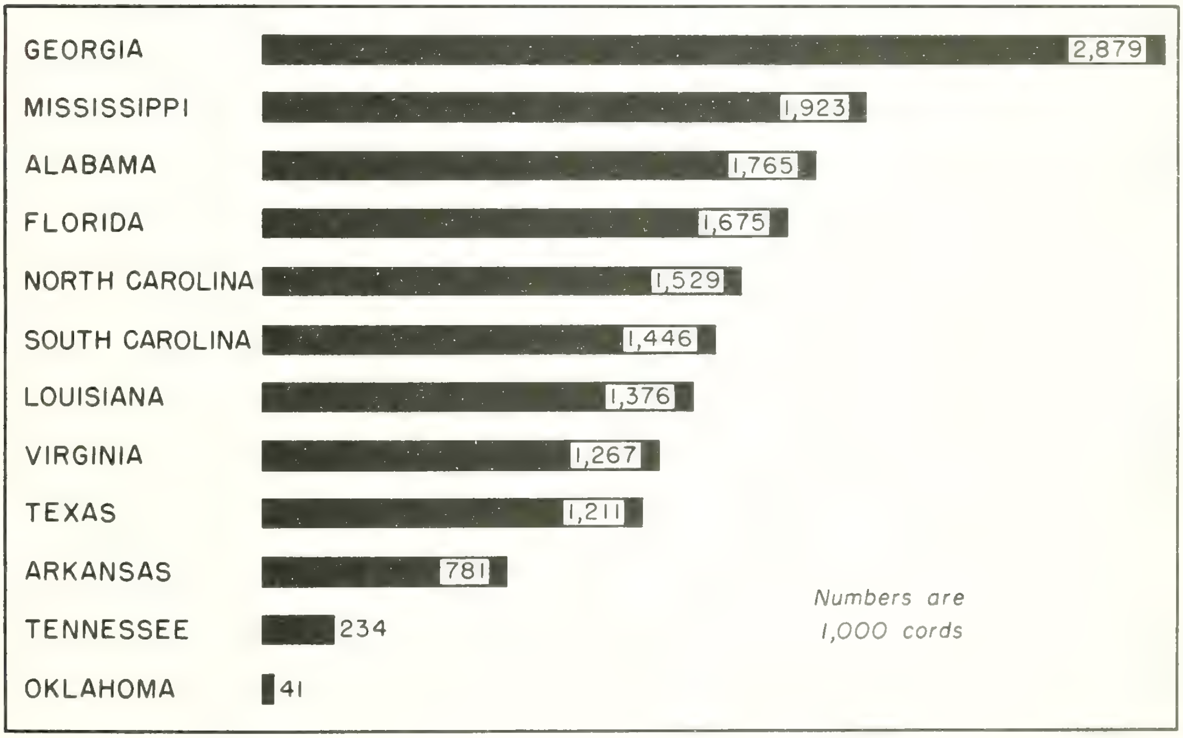

Figure 2.--Pulpwood production in the South, 1953

Pulpwood was cut in 767 counties of the South (figs. 3 and 4, pp. 33, 34), but one-fourth of the total was produced in the 35 counties having cuts of over 60,000 cords each. Clinch County, Georgia, led with nearly 147,000 cords. Other counties with production of more than 100,000 cords each were Baldwin in Alabama, Winn and Union (parishes) in Louisiana, Fairfield in South Carolina, and Montgomery in Texas.

Table 1.--Pulpwood production in the South by State and species group, 1952 and 1953

(In thousand cords)

State	Percent change from 1952	1953			1952		
		Total	Pine	Hardwood[1]	Total	Pine	Hardwood[2]
Ala.	+ 9.7	1,765.1	1,726.2	38.9	1,608.6	1,581.0	27.6
Ark.	+26.0	781.0	673.2	107.8	619.7	524.3	95.4
Fla.	+ 5.8	1,674.9	1,671.2	3.7	1,583.3	1,581.4	1.9
Ga.	+14.6	2,879.2	2,748.9	130.3	2,513.3	2,400.5	112.8
La.	+11.4	1,375.5	1,179.0	196.5	1,234.7	1,089.0	145.7
Miss.	+ 3.1	1,923.0	1,273.4	649.6	1,864.9	1,332.6	532.3
N. C.	+14.8	1,528.9	1,263.1	265.8	1,332.3	1,085.4	246.9
Okla.	+17.5	41.0	41.0	--	34.9	34.9	--
S. C.	+13.4	1,446.2	1,273.4	172.8	1,275.7	1,132.5	143.2
Tenn.	-12.8	234.2	105.3	128.9	268.5	97.8	170.7
Tex.	+ 4.4	1,210.7	1,159.3	51.4	1,159.9	1,092.8	67.1
Va.	+18.5	1,267.3	1,033.6	233.7	1,069.1	830.5	238.6
All	+10.7	16,127.0	14,147.6	1,979.4	14,564.9	12,782.7	1,782.2

[1] Includes 61,100 cords of chestnut used for pulp.

[2] Includes 91,100 cords of chestnut used for pulp.

Other Wood Used for Pulp

In addition to the rough round pulpwood reported above, the pulp industry obtained nearly 76,000 cords of wood residues from other forest products plants. About 50,200 cords were veneer cores, cull crossties, and pole and piling ends, with veneer cores making up the largest part of this volume. Five sawmills manufactured pulp chips from slabs and edgings, of which the total volume used by pulp mills amounted to 25,700 cords. The amount of pine and hardwoods in each class of material is shown below in cords:

	Pine	Hardwoods	Total
Veneer cores	1,692	48,465	50,157
Sawmill chips	25,697	--	25,697
	27,389	48,465	75,854

Table 2.--Pulpwood production in the Southeastern Station territory by state and survey unit, 1953

State	Forest survey unit[1]	Species group			Total
		Pine	Hardwood	Chestnut	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Virginia	1	334,892	17,877	--	352,769
	2	450,981	79,001	--	529,982
	3	186,254	53,973	--	240,227
	4	52,024	73,834	--	125,858
	5	9,450	7,960	1,101	18,511
	All units	1,033,601	232,645	1,101	1,267,347
North Carolina	1	447,131	47,139	--	494,270
	2	218,355	23,877	--	242,232
	3	437,406	34,293	1,079	472,778
	4	160,255	141,181	18,213	319,649
	All units	1,263,147	246,490	19,292	1,528,929
South Carolina	1	186,317	46,663	--	232,980
	2	428,889	101,030	--	529,919
	3	658,180	25,078	--	683,258
	All units	1,273,386	172,771	--	1,446,157
Georgia	1	1,389,213	83,435	--	1,472,648
	2	331,943	36,392	--	368,335
	3	594,356	2,164	--	596,520
	4	356,852	638	--	357,490
	5	76,489	1,984	5,702	84,175
	All units	2,748,853	124,613	5,702	2,879,168
Florida	1	986,849	281	--	987,130
	2	423,578	3,427	--	427,005
	3	212,368	--	--	212,368
	4	48,361	--	--	48,361
	All units	1,671,156	3,708	--	1,674,864
All states	-	7,990,143	780,227	26,095	8,796,465

[1] For location of survey units, see figure 1.

Table 3.--Pulpwood production in the Southern Station territory by state and survey unit, 1953

State	Forest survey unit[1]	Species group			Total
		Pine	Hardwood	Chestnut	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Alabama	1	373,574	1,502	--	375,076
	2	264,310	10,003	--	274,313
	3	630,206	13,928	--	644,134
	4	231,056	4,325	--	235,381
	5	219,218	9,186	--	228,404
	6	7,832	--		7,832
	All units	1,726,196	38,944	--	1,765,140
Arkansas	1	30,077	25,396	--	55,473
	2	--	3,198	--	3,198
	3	525,202	73,567	--	598,769
	4	94,913	2,183	--	97,096
	5	23,049	3,397	--	26,446
	All units	673,241	107,741	--	780,982
Louisiana	1	23,966	68,080	--	92,046
	2	7,277	9,234	--	16,511
	3	293,388	13,512	--	306,900
	4	264,733	32,821	--	297,554
	5	589,604	72,885	--	662,489
	All units	1,178,968	196,532	--	1,375,500
Mississippi	1	19,655	53,771	--	73,426
	2	93,813	60,875	--	154,688
	3	722,851	402,839	--	1,125,690
	4	437,077	132,094	--	569,171
	All units	1,273,396	649,579	--	1,922,975
Oklahoma	All units	41,028	--	--	41,028

Table 3.--Pulpwood production in the Southern Station territory by state and survey unit, 1953 (cont.)

State	Forest survey unit[1]	Species group			Total
		Pine	Hardwood	Chestnut	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Tennessee	1	--	3,015	--	3,015
	2	--	--	9,942	9,942
	3	--	--	5,622	5,622
	4	18,026	32,910	13,056	63,992
	5	87,319	57,886	6,386	151,591
	All units	105,345	93,811	35,006	234,162
Texas	1	654,680	41,667	--	696,347
	2	480,747	9,245	--	489,992
	3	23,834	531	--	24,365
	All units	1,159,261	51,443	--	1,210,704
All states		6,157,435	1,138,050	35,006	7,330,491

[1] For location of survey units, see figure 1.

Table 4.--Pulpwood production in Alabama, 1953

(In standard cords)

County	Pine	Hardwood	Total
Autauga	8,437	--	8,437
Baldwin	133,583	1,381	134,964
Barbour	25,953	--	25,953
Bibb	31,717	2,284	34,001
Blount	11,176	758	11,934
Bullock	28,083	--	28,083
Butler	41,713	513	42,226
Calhoun	6,948	--	6,948
Chambers	43,222	3,264	46,486
Cherokee	2,673	--	2,673
Chilton	24,903	102	25,005
Choctaw	43,025	--	43,025
Clarke	49,372	1,422	50,794
Clay	17,266	792	18,058
Cleburne	5,636	--	5,636
Coffee	22,478	--	22,478
Colbert	792	--	792
Conecuh	21,734	--	21,734
Coosa	30,388	4,246	34,634
Covington	30,082	--	30,082
Crenshaw	19,591	--	19,591
Cullman	7,525	--	7,525
Dale	10,688	--	10,688
Dallas	28,297	315	28,612
Dekalb	1,120	--	1,120
Elmore	48,315	1,272	49,587
Escambia	34,629	121	34,750
Etowah	10,944	38	10,982
Fayette	32,415	565	32,980
Franklin	2,562	--	2,562
Geneva	11,732	--	11,732
Greene	12,370	445	12,815
Hale	17,311	35	17,346
Henry	24,581	--	24,581
Houston	10,100	--	10,100
Jackson	93	--	93
Jefferson	8,859	--	8,859
Lamar	7,590	--	7,590

Table 4.--Pulpwood production in Alabama, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Lauderdale	--	--	--
Lawrence	32	--	32
Lee	63,585	2,714	66,299
Limestone	74	--	74
Lowndes	36,219	3,523	39,742
Macon	30,236	--	30,236
Madison	1,403	--	1,403
Marengo	40,874	4,079	44,953
Marion	8,012	250	8,262
Marshall	1,550	--	1,550
Mobile	93,304	--	93,304
Monroe	37,456	279	37,735
Montgomery	33,824	--	33,824
Morgan	206	--	206
Perry	31,008	746	31,754
Pickens	30,779	--	30,779
Pike	28,820	--	28,820
Randolph	21,954	1,253	23,207
Russell	19,351	--	19,351
St. Clair	15,571	574	16,145
Shelby	28,237	--	28,237
Sumter	19,375	3,273	22,648
Talladega	11,591	1,525	13,116
Tallapoosa	70,078	2,225	72,303
Tuscaloosa	59,854	--	59,854
Walker	36,646	--	36,646
Washington	81,976	--	81,976
Wilcox	52,474	950	53,424
Winston	3,804	--	3,804
Total	1,726,196	38,944	1,765,140

Table 5.--Pulpwood production in Arkansas, 1953

(In standard cords)

County	Pine	Hardwood	Total
Arkansas	--	--	--
Ashley	40,167	9,074	49,241
Baxter	861	--	861
Benton	--	--	--
Boone	--	--	--
Bradley	27,187	3,814	31,001
Calhoun	21,669	501	22,170
Carroll	--	--	--
Chicot	--	4,057	4,057
Clark	47,909	10,249	58,158
Clay	--	--	--
Cleburne	--	--	--
Cleveland	12,851	491	13,342
Columbia	24,065	--	24,065
Conway	66	33	99
Craighead	--	--	--
Crawford	1,761	190	1,951
Crittenden	--	3,198	3,198
Cross	--	--	--
Dallas	26,421	3,667	30,088
Desha	-	3,311	3,311
Drew	21,978	13,916	35,894
Faulkner	1,683	35	1,718
Franklin	27	--	27
Fulton	114	--	114
Garland	19,566	304	19,870
Grant	54,763	2,585	57,348
Greene	--	--	--
Hempstead	17,252	1,009	18,261
Hot Spring	23,044	1,204	24,248
Howard	10,128	1,963	12,091
Independence	--	13	13
Izard	406	--	406
Jackson	--	--	--
Jefferson	26,100	4,601	30,701
Johnson	8,344	2,020	10,364
Lafayette	26,618	--	26,618
Lawrence	--	--	--
Lee	--	3,043	3,043

Table 5.--Pulpwood production in Arkansas, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Lincoln	2,962	4,484	7,446
Little River	14,530	--	14,530
Logan	4,558	--	4,558
Lonoke	--	--	--
Madison	--	--	--
Marion	--	--	--
Miller	9,625	--	9,625
Mississippi	--	--	--
Monroe	1,015	194	1,209
Montgomery	4,831	625	5,456
Nevada	20,955	1,293	22,248
Newton	--	--	--
Ouachita	31,674	4,318	35,992
Perry	4,829	--	4,829
Phillips	--	5,706	5,706
Pike	22,717	3,319	26,036
Poinsett	--	--	--
Polk	15,447	--	15,447
Pope	9,787	1,077	10,864
Prairie	--	--	--
Pulaski	8,421	170	8,591
Randolph	--	--	--
St. Francis	--	--	--
Saline	23,852	1,084	24,936
Scott	7,753	--	7,753
Searcy	--	--	--
Sebastian	617	--	617
Sevier	14,406	663	15,069
Sharp	--	--	--
Stone	--	--	--
Union	57,243	15,501	72,744
Van Buren	--	--	--
Washington	--	--	--
White	--	29	29
Woodruff	--	--	--
Yell	5,039	--	5,039
Total	673,241	107,741	780,982

Table 6.--Pulpwood production in Florida, 1953

(In standard cords)

County	Pine	Hardwood	Total
Alachua	65,219	--	65,219
Baker	84,331	--	84,331
Bay	20,783	--	20,783
Bradford	45,767	--	45,767
Brevard	34,623	--	34,623
Broward	--	--	--
Calhoun	26,698	--	26,698
Charlotte	3,226	--	3,226
Citrus	8,549	--	8,549
Clay	69,244	--	69,244
Collier	9,965	--	9,965
Columbia	53,825	265	54,090
Dade	2,181	--	2,181
De Soto	5,038	--	5,038
Dixie	19,575	--	19,575
Duval	51,663	--	51,663
Escambia	34,861	2,489	37,350
Flagler	40,990	--	40,990
Franklin	7,644	--	7,644
Gadsden	29,622	200	29,822
Gilchrist	11,256	--	11,256
Glades	6,850	--	6,850
Gulf	10,712	--	10,712
Hamilton	62,899	--	62,899
Hardee	13,248	--	13,248
Hendry	2,749	--	2,749
Hernando	7,920	--	7,920
Highlands	6,653	--	6,653
Hillsborough	14,347	--	14,347
Holmes	22,952	--	22,952
Indian River	9,518	--	9,518
Jackson	52,879	--	52,879
Jefferson	22,379	361	22,740
Lafayette	5,966	--	5,966
Lake	2,578	--	2,578
Lee	11,079	--	11,079
Leon	29,417	93	29,510
Levy	24,801	--	24,801

Table 6.--Pulpwood production in Florida, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Liberty	22,041	--	22,041
Madison	41,152	--	41,152
Manatee	2,854	--	2,854
Marion	78,043	--	78,043
Martin	1,721	--	1,721
Monroe	--	--	--
Nassau	74,529	16	74,545
Okaloosa	25,285	3	25,288
Okeechobee	16,150	--	16,150
Orange	13,449	--	13,449
Osceola	8,502	--	8,502
Palm Beach	10,590	--	10,590
Pasco	5,375	--	5,375
Pinellas	701	--	701
Polk	22,543	--	22,543
Putnam	50,430	--	50,430
St. Johns	70,650	--	70,650
St. Lucie	9,264	--	9,264
Santa Rosa	52,608	265	52,873
Sarasota	9,005	--	9,005
Seminole	18,803	--	18,803
Sumter	3,248	--	3,248
Suwannee	25,613	--	25,613
Taylor	13,085	--	13,085
Union	44,357	--	44,357
Volusia	53,454	--	53,454
Wakulla	28,422	--	28,422
Walton	13,694	16	13,710
Washington	23,581	--	23,581
Total	1,671,156	3,708	1,674,864

Table 7.--Pulpwood production in Georgia, 1953

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Appling	58,828	1,116	--	59,944
Atkinson	36,191	219	--	36,410
Bacon	49,990	381	--	50,371
Baker	4,584	--	--	4,584
Baldwin	8,620	238	--	8,858
Banks	1,661	--	--	1,661
Barrow	2,989	75	--	3,064
Bartow	16,224	--	--	16,224
Ben Hill	9,399	580	--	9,979
Berrien	15,909	113	--	16,022
Bibb	7,104	--	--	7,104
Bleckley	3,079	16	--	3,095
Brantley	83,558	2,670	--	86,228
Brooks	9,348	17	--	9,365
Bryan	47,308	2,732	--	50,040
Bulloch	38,369	779	--	39,148
Burke	7,219	--	--	7,219
Butts	13,502	--	--	13,502
Calhoun	5,586	--	--	5,586
Camden	67,368	5,940	--	73,308
Candler	8,391	108	--	8,499
Carroll	1,403	--	--	1,403
Catoosa	--	--	--	--
Charlton	75,239	50	--	75,289
Chatham	11,974	5,427	--	17,401
Chattahoochee	9,571	--	--	9,571
Chattooga	704	--	--	704
Cherokee	7,250	--	--	7,250
Clarke	4,156	--	--	4,156
Clay	672	--	--	672
Clayton	7,438	--	--	7,438
Clinch	146,963	--	--	146,963
Cobb	7,043	--	--	7,043
Coffee	52,668	520	--	53,188
Colquitt	12,151	--	--	12,151
Columbia	9,030	75	--	9,105
Cook	5,672	17	--	5.689
Coweta	30,474	--	--	30,474
Crawford	25,333	--	--	25,333
Crisp	6,607	33	--	6,640

Table 7.--Pulpwood production in Georgia, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Dade	--	--	--	--
Dawson	--	--	--	--
Decatur	30,521	15,981	--	46,502
De Kalb	4,752	--	--	4,752
Dodge	21,265	2,015	--	23,280
Dooly	3,976	--	--	3,976
Dougherty	6,297	--	--	6,297
Douglas	1,938	--	--	1,938
Early	11,015	3,407	--	14,422
Echols	38,352	--	--	38,352
Effingham	43,167	2,257	--	45,424
Elbert	26,610	281	--	26,891
Emanuel	42,653	--	--	42,653
Evans	16,576	247	--	16,823
Fannin	6,539	975	4,105	11,619
Fayette	4,126	--	--	4,126
Floyd	7,613	--	--	7,613
Forsyth	--	--	--	--
Franklin	5,700	--	--	5,700
Fulton	12,324	--	--	12,324
Gilmer	11,573	919	1,597	14,089
Glascock	--	--	--	--
Glynn	55,471	16,381	--	71,852
Gordon	4,250	--	--	4,250
Grady	30,240	1,222	--	31,462
Greene	28,193	--	--	28,193
Gwinnett	9,896	--	--	9,896
Habersham	1,855	--	--	1,855
Hall	19,105	--	--	19,105
Hancock	22,562	112	--	22,674
Haralson	4,400	--	--	4,400
Harris	36,958	83	--	37,041
Hart	4,826	--	--	4,826
Heard	2,259	--	--	2,259
Henry	6,366	--	--	6,366
Houston	6,553	--	--	6,553
Irwin	15,482	2,205	--	17,687
Jackson	15,472	--	--	15,472
Jasper	30,135	--	--	30,135
Jeff Davis	56,115	158	--	56,273

Table 7.--Pulpwood production in Georgia, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Jefferson	5,651	100	--	5,751
Jenkins	8,540	1,824	--	10,364
Johnson	10,389	--	--	10,389
Jones	22,210	--	--	22,210
Lamar	9,104	--	--	9,104
Lanier	20,413	45	--	20,458
Laurens	20,432	1,180	--	21,612
Lee	1,263	--	--	1,263
Liberty	36,230	8,053	--	44,283
Lincoln	2,651	--	--	2,651
Long	37,107	1,889	--	38,996
Lowndes	29,360	648	--	30,008
Lumpkin	--	--	--	--
McDuffie	3,546	--	--	3,546
McIntosh	22,410	14,401	--	36,811
Macon	4,588	--	-	4,588
Madison	16,881	165	--	17,046
Marion	7,210	--	--	7,210
Meriwether	27,717	13	--	27,730
Miller	13,164	--	--	13,164
Mitchell	22,401	1,776	--	24,177
Monroe	45,438	13	--	45,451
Montgomery	15,681	1,662	--	17,343
Morgan	18,266	--	-	18,266
Murray	745	--	--	745
Muscogee	6,495	--	--	6,495
Newton	14,407	--	--	14,407
Oconee	8,278	--	--	8,278
Oglethorpe	22,032	104	--	22,136
Paulding	2,333	--	--	2,333
Peach	6,264	--	--	6,264
Pickens	11,919	--	--	11,919
Pierce	24,556	207	--	24,763
Pike	8,401	--	--	8,401
Polk	12,083	--	--	12,083
Pulaski	1,638	162	--	1,800
Putnam	20,764	--	--	20,764
Quitman	2,889	--	--	2,889
Rabun	3,019	--	--	3,019
Randolph	7,564	--	--	7,564

Table 7.--Pulpwood production in Georgia, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Richmond	3,908	12	--	3,920
Rockdale	4,745	--	--	4,745
Schley	2,486	--	--	2,486
Screven	18,195	615	--	18,810
Seminole	18,789	7,085	--	25,874
Spalding	7,448	--	--	7,448
Stephens	1,614	--	--	1,614
Stewart	14,788	--	--	14,788
Sumter	5,805	194	--	5,999
Talbot	32,530	799	--	33,329
Taliaferro	10,916	--	--	10,916
Tattnall	25,283	513	--	25,796
Taylor	10,212	--	--	10,212
Telfair	29,796	1,369	--	31,165
Terrell	9,298	--	--	9,298
Thomas	32,911	1,764	--	34,675
Tift	6,217	563	--	6,780
Toombs	29,128	2,419	--	31,547
Towns	--	--	--	--
Treutlen	20,157	1,032	--	21,189
Troup	62,935	--	--	62,935
Turner	9,162	87	--	9,249
Twiggs	14,155	310	--	14,465
Union	--	--	--	--
Upson	23,520	--	--	23,520
Walker	345	--	--	345
Walton	5,055	--	--	5,055
Ware	64,916	105	--	65,021
Warren	3,461	--	--	3,461
Washington	19,176	--	--	19,176
Wayne	55,570	5,176	--	60,746
Webster	4,327	--	--	4,327
Wheeler	20,363	1,990	--	22,353
White	--	--	--	--
Whitfield	3,001	90	--	3,091
Wilcox	11,084	421	--	11,505
Wilkes	35,891	--	--	35,891
Wilkinson	9,379	50	--	9,429
Worth	13,538	428	--	13,966
Total	2,748,853	124,613	5,702	2,879,168

Table 8.--Pulpwood production in Louisiana, 1953

(In standard cords)

Parish	Pine	Hardwood	Total
Acadia	2,715	120	2,835
Allen	17,667	1,439	19,106
Ascension	1,126	1,595	2,721
Assumption	--	--	--
Avoyelles	1,130	2,752	3,882
Beauregard	21,499	--	21,499
Bienville	60,195	1,534	61,729
Bossier	44,277	5,003	49,280
Caddo	22,823	4,231	27,054
Calcasieu	12,586	--	12,586
Caldwell	49,039	2,688	51,727
Cameron	--	--	--
Catahoula	5,968	7,053	13,021
Claiborne	36,462	--	36,462
Concordia	3	21,287	21,290
De Soto	60,658	--	60,658
East Baton Rouge	1,273	1,990	3,263
East Carroll	--	2,390	2,390
East Feliciana	17,003	7,916	24,919
Evangeline	14,042	944	14,986
Franklin	1,015	3,801	4,816
Grant	23,456	1,332	24,788
Iberia	--	--	--
Iberville	--	--	--
Jackson	47,167	1,918	49,085
Jefferson	--	--	--
Jefferson Davis	3,887	514	4,401
Lafayette	--	--	--
Lafourche	--	--	--
La Salle	18,822	4,254	23,076
Lincoln	30,647	3,863	34,510
Livingston	82,438	3,576	86,014
Madison	--	6,650	6,650
Morehouse	16,184	5,825	22,009
Natchitoches	43,890	77	43,967
Orleans	--	--	--
Ouachita	25,543	2,217	27,760
Plaquemines	--	--	--
Pointe Coupee	--	556	556
Rapides	54,247	4,591	58,838
Red River	12,251	28	12,279
Richland	632	6,098	6,730

Table 8.--Pulpwood production in Louisiana, 1953 (cont.)

(In standard cords)

Parish	Pine	Hardwood	Total
Sabine	62,093	--	62,093
St. Bernard	--	--	--
St. Charles	--	--	--
St. Helena	9,297	1,063	10,360
St. James	--	--	--
St. John the Baptist	--	--	--
St. Landry	360	35	395
St. Martin	--	--	--
St. Mary	--	--	--
St. Tammany	25,179	434	25,613
Tangipahoa	56,798	7,436	64,234
Tensas	--	13,898	13,898
Terrebonne	--	--	--
Union	74,410	31,206	105,616
Vermilion	--	--	--
Vernon	21,199	361	21,560
Washington	72,745	10,406	83,151
Webster	25,006	3,491	28,497
West Baton Rouge	183	260	443
West Carroll	164	1,078	1,242
West Feliciana	1,763	3,916	5,679
Winn	101,126	16,706	117,832
Total	1,178,968	196,532	1,375,500

Table 9.--Pulpwood production in Oklahoma, 1953

(In standard cords)

County[1]	Pine	Hardwood	Total
Adair	1,072	--	1,072
Atoka	274	--	274
Choctaw	2,705	--	2,705
Latimer	4,894	--	4,894
Le Flore	9,911	--	9,911
McCurtain	8,064	--	8,064
Pittsburg	85	--	85
Pushmataha	14,023	--	14,023
Total	41,028	--	41,028

[1] Counties with no pulpwood production are omitted.

Table 10.--Pulpwood production in Mississippi, 1953

(In standard cords)

County	Pine	Hardwood	Total
Adams	5,453	33,970	39,423
Alcorn	3,210	1,672	4,882
Amite	24,440	14,088	38,528
Attala	25,661	13,871	39,532
Benton	759	46	805
Bolivar	--	3,863	3,863
Calhoun	204	211	415
Carroll	3,176	2,850	6,026
Chickasaw	1,930	910	2,840
Choctaw	12,991	8,292	21,283
Claiborne	8,542	12,007	20,549
Clarke	64,268	20,168	84,436
Clay	1,743	1,420	3,163
Coahoma	--	377	377
Copiah	51,380	37,652	89,032
Covington	20,876	10,301	31,177
De Soto	--	--	--
Forrest	31,975	7,754	39,729
Franklin	27,056	22,822	49,878
George	17,163	2,619	19,782
Greene	32,915	8,395	41,310
Grenada	4,944	4,933	9,877
Hancock	30,214	16	30,230
Harrison	33,887	537	34,424
Hinds	15,067	13,589	28,656
Holmes	17,599	16,250	33,849
Humphreys	--	62	62
Issaquena	--	3,329	3,329
Itawamba	--	--	--
Jackson	34,861	6	34,867
Jasper	60,372	21,281	81,653
Jefferson	17,110	22,404	39,514
Jefferson Davis	13,855	3,612	17,467
Jones	33,851	23,125	56,976
Kemper	17,913	2,174	20,087
Lafayette	4,720	2,877	7,597
Lamar	16,744	7,275	24,019
Lauderdale	55,552	13,145	68,697
Lawrence	37,541	17,764	55,305
Leake	30,875	15,052	45,927
Lee	1,708	767	2,475
Leflore	466	5,027	5,493

Table 10.--Pulpwood production in Mississippi, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Lincoln	37,745	16,848	54,593
Lowndes	4,520	36	4,556
Madison	9,164	3,987	13,151
Marion	22,863	16,260	39,123
Marshall	2,236	927	3,163
Monroe	3,993	766	4,759
Montgomery	9,600	9,345	18,945
Neshoba	14,138	7,336	21,474
Newton	46,591	14,172	60,763
Noxubee	10,057	2,060	12,117
Oktibbeha	8,875	4,743	13,618
Panola	15	4,931	4,946
Pearl River	25,250	9,214	34,464
Perry	16,252	8,823	25,075
Pike	24,819	14,294	39,113
Pontotoc	4,577	955	5,532
Prentiss	7,845	2,801	10,646
Quitman	--	921	921
Rankin	43,778	17,111	60,889
Scott	61,171	17,738	78,909
Sharkey	14	2,516	2,530
Simpson	29,587	11,763	41,350
Smith	10,956	6,999	17,955
Stone	27,027	1,625	28,652
Sunflower	--	--	--
Tallahatchie	63	1,629	1,692
Tate	405	682	1,087
Tippah	1,301	245	1,546
Tishomingo	4,614	1,148	5,762
Tunica	--	2,620	2,620
Union	2,610	553	3,163
Walthall	13,373	6,963	20,336
Warren	290	13,072	13,362
Washington	--	2,198	2,198
Wayne	28,430	7,805	36,235
Webster	5,248	3,977	9,225
Wilkinson	13,366	41,876	55,242
Winston	17,790	6,432	24,222
Yalobusha	2,589	5,788	8,377
Yazoo	1,223	1,907	3,130
Total	1,273,396	649,579	1,922,975

Table 11.--Pulpwood production in North Carolina, 1953

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Alamance	14,763	384	--	15,147
Alexander	3,845	32	--	3,877
Alleghany	--	--	--	--
Anson	15,713	2,443	--	18,156
Ashe	98	1,308	--	1,406
Avery	--	486	--	486
Beaufort	8,504	3,063	--	11,567
Bertie	11,163	142	--	11,305
Bladen	70,796	8,319	--	79,115
Brunswick	37,886	7,860	--	45,746
Buncombe	34,436	39,198	--	73,634
Burke	20,794	14,244	--	35,038
Cabarrus	8,281	229	--	8,510
Caldwell	13,567	1,255	--	14,822
Camden	--	--	--	--
Carteret	9,584	--	--	9,584
Caswell	--	--	--	--
Catawba	4,379	16	--	4,395
Chatham	38,836	3,360	--	42,196
Cherokee	20,755	11,638	3,470	35,863
Chowan	753	--	--	753
Clay	--	--	--	--
Cleveland	5,250	460	--	5,710
Columbus	39,759	7,230	--	46,989
Craven	34,283	1,274	--	35,557
Cumberland	17,423	343	--	17,766
Currituck	376	--	--	376
Dare	--	--	--	--
Davidson	1,993	444	--	2,437
Davie	5,377	828	--	6,205
Duplin	33,261	3,040	--	36,301
Durham	27,803	928	--	28,731
Edgecombe	9,648	1,175	--	10,823
Forsyth	577	365	--	942
Franklin	20,424	959	--	21,383
Gaston	6,339	378	--	6,717
Gates	4,996	--	--	4,996
Graham	1,501	1,231	--	2,732
Granville	22,011	1,481	--	23,492
Greene	425	--	--	425
Guilford	2,716	--	--	2,716
Halifax	57,101	7,060	--	64,161

Table 11.--Pulpwood production in North Carolina, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Harnett	9,986	456	--	10,442
Haywood	4,611	11,843	--	16,454
Henderson	7,825	8,789	--	16,614
Hertford	6,566	1,231	--	7,797
Hoke	7,661	270	--	7,931
Hyde	2,140	3,618	--	5,758
Iredell	31,012	6,391	--	37,403
Jackson	6,286	17,439	9,441	33,166
Johnston	13,837	474	--	14,311
Jones	9,190	563	--	9,753
Lee	10,804	441	--	11,245
Lenoir	13,346	60	--	13,406
Lincoln	2,796	60	--	2,856
McDowell	9,588	2,339	--	11,927
Macon	--	7,754	4,066	11,820
Madison	8,953	4,228	--	13,181
Martin	15,132	1,523	--	16,655
Mecklenburg	4,958	230	--	5,188
Mitchell	816	7,490	--	8,306
Montgomery	19,280	880	--	20,160
Moore	20,125	1,803	--	21,928
Nash	7,003	--	--	7,003
New Hanover	18,699	889	--	19,588
Northampton	24,287	3,064	--	27,351
Onslow	20,951	1	--	20,952
Orange	16,779	311	--	17,090
Pamlico	605	--	--	605
Pasquotank	--	--	--	--
Pender	19,277	2,637	--	21,914
Perquimans	5,493	--	--	5,493
Person	4,703	--	--	4,703
Pitt	7,301	527	--	7,828
Polk	165	329	--	494
Randolph	4,224	30	--	4,254
Richmond	17,958	2,184	--	20,142
Robeson	35,498	6,796	--	42,294
Rockingham	5,387	--	--	5,387
Rowan	3,086	342	--	3,428
Rutherford	15,514	7,090	1,079	23,683
Sampson	27,806	2,035	--	29,841
Scotland	4,446	624	--	5,070
Stanly	2,214	--	--	2,214

Table 11.--Pulpwood production in North Carolina, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Stokes	912	--	--	912
Surry	38,712	227	--	38,939
Swain	5,800	5,973	1,236	13,009
Transylvania	1,357	2,803	--	4,160
Tyrrell	--	--	--	--
Union	19,103	180	--	19,283
Vance	7,896	207	--	8,103
Wake	52,612	4,875	--	57,487
Warren	29,746	834	--	30,580
Washington	9,716	1,200	--	10,916
Watauga	--	--	--	--
Wayne	17,997	1,114	--	19,111
Wilkes	23,868	14	--	23,882
Wilson	3,704	--	--	3,704
Yadkin	--	--	--	--
Yancey	--	3,149	--	3,149
Total	1,263,147	246,490	19,292	1,528,929

Table 12.--Pulpwood production in South Carolina, 1953

(In standard cords)

County	Pine	Hardwood	Total
Abbeville	44,503	250	44,753
Aiken	14,767	64	14,831
Allendale	13,842	8,240	22,082
Anderson	21,429	--	21,429
Bamberg	2,701	1,218	3,919
Barnwell	3,358	348	3,706
Beaufort	11,532	1,768	13,300
Berkeley	81,449	8,232	89,681
Calhoun	6,296	532	6,828
Charleston	16,134	1,987	18,121
Cherokee	17,617	2,210	19,827
Chester	65,771	2,043	67,814
Chesterfield	14,855	20,190	35,045
Clarendon	12,344	6,185	18,529
Colleton	25,142	4,622	29,764
Darlington	16,691	2,996	19,687
Dillon	8,682	566	9,248

Table 12.--Pulpwood production in South Carolina, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Dorchester	31,933	11,575	43,508
Edgefield	25,547	1,994	27,541
Fairfield	100,608	3,164	103,772
Florence	11,508	833	12,341
Georgetown	81,989	17,895	99,884
Greenville	19,946	874	20,820
Greenwood	39,434	95	39,529
Hampton	25,273	6,138	31,411
Horry	56,985	6,094	63,079
Jasper	19,125	2,487	21,612
Kershaw	34,164	11,739	45,903
Lancaster	45,008	593	45,601
Laurens	56,364	472	56,836
Lee	5,217	559	5,776
Lexington	15,970	1,343	17,313
McCormick	19,007	520	19,527
Marion	15,422	2,085	17,507
Marlboro	4,115	3,079	7,194
Newberry	40,317	2,043	42,360
Oconee	14,693	2,468	17,161
Orangeburg	16,378	8,328	24,706
Pickens	10,671	41	10,712
Richland	28,363	7,968	36,331
Saluda	8,290	--	8,290
Spartanburg	38,143	7,163	45,306
Sumter	8,183	1,303	9,486
Union	44,645	803	45,448
Williamsburg	32,788	9,319	42,107
York	46,187	345	46,532
Total	1,273,386	172,771	1,446,157

Table 13.--Pulpwood production in Tennessee, 1953

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Anderson	4,543	1,730	216	6,489
Bedford	--	--	467	467
Benton	--	--	--	--
Bledsoe	16	--	--	16
Blount	8,069	2,095	--	10,164
Bradley	4,360	339	--	4,699
Campbell	398	4,276	458	5,132
Cannon	--	--	--	--
Carroll	--	--	--	--
Carter	--	1,849	--	1,849
Cheatham	--	--	--	--
Chester	--	--	--	--
Claiborne	2,112	4,410	2,510	9,032
Clay	--	--	--	--
Cocke	7,921	6,033	904	14,858
Coffee	--	--	3,269	3,269
Crockett	--	--	--	--
Cumberland	--	13,453	--	13,453
Davidson	--	--	--	--
Decatur	--	--	--	--
De Kalb	--	--	--	--
Dickson	--	--	--	--
Dyer	--	--	--	--
Fayette	--	--	--	--
Fentress	--	867	--	867
Franklin	--	--	136	136
Gibson	--	--	--	--
Giles	--	--	19	19
Grainger	53	494	--	547
Greene	49	--	--	49
Grundy	17	--	--	17
Hamblen	144	--	--	144
Hamilton	5,622	1,031	--	6,653
Hancock	--	--	220	220
Hardeman	--	--	--	--
Hardin	--	--	--	--
Hawkins	2,132	613	--	2,745
Haywood	--	--	--	--
Henderson	--	--	--	--
Henry	--	--	--	--
Hickman	--	--	1,790	1,790
Houston	--	--	--	--
Humphreys	--	--	214	214

Table 13.--Pulpwood production in Tennessee, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Jackson	--	--	--	--
Jefferson	279	1,101	--	1,380
Johnson	--	135	--	135
Knox	6,859	3,271	432	10,562
Lake	--	--	--	--
Lauderdale	--	--	--	--
Lawrence	--	--	7,140	7,140
Lewis	--	--	798	798
Lincoln	--	--	1,226	1,226
Loudon	481	472	--	953
McMinn	14,552	6,657	554	21,763
McNairy	--	--	--	--
Macon	--	--	19	19
Madison	--	--	--	--
Marion	--	--	--	--
Marshall	--	--	--	--
Maury	--	--	--	--
Meigs	--	--	--	--
Monroe	10,868	3,483	17	14,368
Montgomery	--	--	19	19
Moore	--	--	--	--
Morgan	4,919	1,294	--	6,213
Obion	--	--	--	--
Overton	--	1,559	--	1,559
Perry	--	--	--	--
Pickett	--	--	--	--
Polk	1,533	629	--	2,162
Putnam	--	3,775	7,774	11,549
Rhea	7,920	1,702	--	9,622
Roane	5,552	15,140	669	21,361
Robertson	--	--	--	--
Rutherford	--	--	39	39
Scott	12,676	7,686	--	20,362
Sequatchie	--	--	--	--
Sevier	--	944	108	1,052
Shelby	--	3,015	--	3,015
Smith	--	--	--	--
Stewart	--	--	--	--
Sullivan	133	1,138	--	1,271
Sumner	--	--	564	564
Tipton	--	--	--	--
Trousdale	--	--	--	--
Unicoi	--	648	--	648

Table 13.--Pulpwood production in Tennessee, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Union	4,098	3,932	756	8,786
Van Buren	--	-	--	--
Warren	--	-	2,918	2,918
Washington	39	40	--	79
Wayne	--	--	--	--
Weakley	--	--	--	--
White	--	--	1,770	1,770
Williamson	--	--	--	--
Wilson	--	--	--	--
Total	105,345	93,811	35,006	234,162

Table 14.--Pulpwood production in Texas, 1953

(In standard cords)

County[1/]	Pine	Hardwood	Total
Anderson	15,652	1,766	17,418
Angelina	52,812	--	52,812
Bowie	14,994	--	14,994
Camp	8,910	--	8,910
Cass	30,576	--	30,576
Chambers	152	--	152
Cherokee	41,885	3,393	45,278
Franklin	4,300	--	4,300
Gregg	34,923	--	34,923
Grimes	18,117	316	18,433
Hardin	27,804	1,936	29,740
Harris	53,025	470	53,495
Harrison	45,912	--	45,912
Henderson	2,081	--	2,081
Houston	63,437	1,311	64,748
Jasper	51,339	8,723	60,062
Jefferson	2,033	291	2,324
Lamar	77	--	77
Leon	1,573	--	1,573
Liberty	55,723	1,132	56,855
Marion	22,706	--	22,706
Montgomery	94,926	6,283	101,209
Morris	6,315	--	6,315
Nacogdoches	62,337	1,709	64,046
Newton	19,226	5,056	24,282

Table 14.--Pulpwood production in Texas, 1953 (cont.)

(In standard cords)

County[1]	Pine	Hardwood	Total
Orange	19,641	156	19,797
Panola	49,283	487	49,770
Polk	40,456	4,827	45,283
Red River	12,276	--	12,276
Rusk	20,810	359	21,169
Sabine	11,837	--	11,837
San Augustine	39,720	--	39,720
San Jacinto	16,122	1,037	17,159
Shelby	52,395	367	52,762
Smith	8,727	598	9,325
Titus	3,043	--	3,043
Trinity	37,245	622	37,867
Tyler	27,787	--	27,787
Upshur	41,551	566	42,117
Walker	41,547	9,823	51,370
Waller	1,834	215	2,049
Wood	4,152	--	4,152
Total	1,159,261	51,443	1,210,704

[1] Counties with no pulpwood production are omitted.

Table 15.--Pulpwood production in Virginia, 1953

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Accomac	6,789	--	--	6,789
Albemarle	40,913	4,443	--	45,356
Alleghany	11,650	29,773	--	41,423
Amelia	46,528	4,151	--	50,679
Amherst	46,899	20,352	--	67,251
Appomattox	10,441	2,542	--	12,983
Arlington	--	--	--	--
Augusta	2,794	1,858	--	4,652
Bath	2,945	17,221	--	20,166
Bedford	52,022	14,942	--	66,964
Bland	--	--	--	--
Botetourt	8,510	8,343	--	16,853
Brunswick	40,221	3,761	--	43,982
Buchanan	4,807	684	--	5,491
Buckingham	35,358	30,488	--	65,846

Table 15.--Pulpwood production in Virginia, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Campbell	45,503	4,845	--	50,348
Caroline	256	45	--	301
Carroll	1,182	--	--	1,182
Charles City	15,910	--	--	15,910
Charlotte	39,991	287	--	40,278
Chesterfield	16,113	1,115	--	17,228
Clarke	--	--	--	--
Craig	4,164	4,649	--	8,813
Culpeper	9,168	3,706	--	12,874
Cumberland	28,214	1,629	--	29,843
Dickenson	--	--	--	--
Dinwiddie	18,769	687	--	19,456
Elizabeth City	--	--	--	--
Essex	4,166	--	--	4,166
Fairfax	677	--	--	677
Fauquier	1,186	39	--	1,225
Floyd	--	13	--	13
Fluvanna	17,217	7,259	--	24,476
Franklin	16,191	952	--	17,143
Frederick	5,431	584	--	6,015
Giles	79	180	--	259
Gloucester	21,332	--	--	21,332
Goochland	19,051	7,507	--	26,558
Grayson	387	1,054	--	1,441
Greene	298	--	--	298
Greensville	21,316	2,946	--	24,262
Halifax	18,213	46	--	18,259
Hanover	966	304	--	1,270
Henrico	4,658	--	--	4,658
Henry	17,953	--	-	17,953
Highland	252	1,964	--	2,216
Isle of Wight	9,294	2,392	--	11,686
James City	7,513	18	--	7,531
King and Queen	18,979	--	--	18,979
King George	1,211	--	--	1,211
King William	15,394	--	--	15,394
Lancaster	14,133	--	--	14,133
Lee	--	1,520	--	1,520
Loudoun	97	--	--	97
Louisa	11,757	1,552	--	13,309
Lunenburg	7,782	83	--	7,865
Madison	470	--	--	470
Mathews	41	--	--	41

Table 15.--Pulpwood production in Virginia, 1953 (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Mecklenburg	14,071	407	--	14,475
Middlesex	6,429	--	--	6,429
Montgomery	2,811	153	--	2,964
Nansemond	6,755	1,559	--	8,314
Nelson	21,166	6,781	--	27,947
New Kent	14,100	530	--	14,630
Norfolk	1,056	52	--	1,108
Northampton	691	--	--	691
Northumberland	1,516	--	--	1,516
Nottoway	16,957	5,227	--	22,184
Orange	5,176	2,133	--	7,309
Page	194	138	--	332
Patrick	--	--	--	--
Pittsylvania	48,132	417	--	48,549
Powhatan	16,279	3,974	--	20,253
Prince Edward	37,346	9,011	--	46,357
Prince George	14,338	1,037	--	15,375
Prince William	9,477	--	--	9,477
Princess Anne	504	--	--	504
Pulaski	76	9	--	85
Rappahannock	211	--	--	211
Richmond	10,227	--	--	10,227
Roanoke	1,047	20	--	1,067
Rockbridge	7,576	8,388	--	15,964
Rockingham	4,327	395	--	4,722
Russell	--	108	--	108
Scott	--	1,959	785	2,744
Shenandoah	1,685	65	--	1,750
Smyth	--	21	--	21
Southampton	14,255	1,470	--	15,725
Spotsylvania	1,373	--	--	1,373
Stafford	1,118	201	--	1,319
Surry	14,326	29	--	14,355
Sussex	23,321	1,859	--	25,180
Tazewell	--	--	--	--
Warren	1,449	436	--	1,885
Warwick	2,713	73	--	2,786
Washington	--	2,141	--	2,141
Westmoreland	2,901	--	--	2,901
Wise	--	118	316	434
Wythe	108	--	--	108
York	4,699	--	--	4,699
Total	1,033,601	232,645	1,101	1,267,347

Table 16.--Companies drawing pulpwood from the South, 1953

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
ALABAMA		
Coosa Pines	(1) Coosa River Newsprint Co.	454
Tuscaloosa	(2) Gulf States Paper Corp.	400
Mobile	(3) Hollingsworth and Whitney Co.	420
Mobile	(4) International Paper Co.	625
Mobile	(5) National Gypsum Co.	150
Mobile	(6) Ruberoid Co.	60
Crichton	(7) Stone-Mann Paper Co.[3]	60
ARKANSAS		
Crossett	(8) Crossett Paper Mills	375
Camden	(9) International Paper Co.	600
FLORIDA		
Pensacola	(10) Armstrong Cork Co.	130
Fernandina	(11) Container Corp. of America	350
Palatka	(12) Hudson Pulp and Paper Corp.	400
Panama City	(13) International Paper Co.	1,490
Jacksonville	(14) National Container Corp.	500
Fernandina	(15) Rayonier, Inc.	300
Port St. Joe	(16) St. Joe Paper Co.	400
Eastport	(17) St. Regis Paper Co.	330
Pensacola	(18) St. Regis Paper Co.	738
GEORGIA		
Macon	(19) Armstrong Cork Co.	200
Brunswick	(20) Brunswick Pulp and Paper Co.	400
Savannah	(21) Certain-teed Products Corp.	40
Macon	(22) Macon Kraft Co.	600
St. Marys	(23) St. Marys Kraft Corp.	500
Savannah	(24) Southern Paperboard Corp.	500
Savannah	(25) Union Bag and Paper Corp.	1,900
LOUISIANA		
Shreveport	(26) Bird and Son	50
West Monroe	(27) The Brown Paper Mill Co.	550
Elizabeth	(28) Calcasieu Paper Co., Inc.	200
New Orleans	(29) Flintkote Co.	60
Bogalusa	(30) Gaylord Container Corp.	955
Bastrop	(31) International Paper Co.	1,085
Spring Hill	(32) International Paper Co.	1,535
Hodge	(33) Southern Advance Bag and Paper Co.	325

Table 16.--Companies drawing pulpwood from the South, 1953 (cont.)

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
MARYLAND		
Luke	(34) West Virginia Pulp and Paper Co.	300
MISSISSIPPI		
Meridian	(35) Flintkote Co.	150
Moss Point	(36) International Paper Co.	615
Natchez	(37) International Paper Co.	850
Laurel	(38) Masonite Corp.	800
Natchez	(39) Johns-Manville Products Corp.	300
Greenville	(40) United States Gypsum Co.	180
N. CAROLINA		
Canton	(41) Champion Paper and Fibre Co.	800
Roanoke Rapids	(42) Halifax Paper Co., Inc.	320
Sylva	(43) Mead Corp.	180
Plymouth	(44) North Carolina Pulp Co.	800
Acme	(45) Riegel-Carolina Corp.	280
OHIO		
Chillicothe	(46) Mead Corp.	125
PENNSYLVANIA		
York Haven	(47) International Paper Co.	65
Spring Grove	(48) P. H. Glatfelter Co.	100
S. CAROLINA		
Georgetown	(49) International Paper Co.	1,920
Hartsville	(50) Sonoco Products Co.	80
Charleston	(51) West Virginia Pulp and Paper Co.	350
TENNESSEE		
Harriman	(52) Mead Corp.	100
Kingsport	(53) Mead Corp.	160
Nashville	(54) Mead Corp.	63
Knoxville	(55) Southern Extract Co.	80
TEXAS		
Pasadena	(56) Champion Paper and Fibre Co.	520
Lufkin	(57) Southland Paper Mills, Inc.	480

Table 16.--Companies drawing pulpwood from the South, 1953 (cont.)

State and plant location		Name of company and map code[1]	Pulp capacity 24 hrs.[2]
			Tons
VIRGINIA			
Franklin	(58)	Camp Manufacturing Co., Inc.	400
West Point	(59)	Chesapeake Corp. of Virginia	500
Hopewell	(60)	Continental Can Co., Inc.	400
Bristol	(61)	Mead Corp., Columbian Division	85
Lynchburg	(62)	Mead Corp., Heald Division	125
Big Island	(63)	National Container Corp. of Virginia	150
Jarratt	(64)	Southern Johns-Manville Products Corp.	200
Covington	(65)	West Virginia Pulp and Paper Co.	600

1/ Corresponds to numbers at mill locations in figure 1.

2/ Southern Pulp and Paper Manufacturer, vol. 16, no. 10 (Oct. 1, 1953); and other sources.

3/ No pulpwood used in 1953.

Table 17.--Pulp mills under construction in the South, 1953

State and plant location		Name of company and map code[1]	Pulp capacity 24 hrs.[2]
			Tons
GEORGIA			
Rome	(66)	Rome Kraft Co.	615
Valdosta	(67)	National Container Corp.	500
Jesup	(68)	Rayonier, Inc.	250
FLORIDA			
Perry	(69)	The Buckeye Cellulose Corp.	200
TENNESSEE			
Calhoun	(70)	Bowaters Southern Paper Corp.	560
TEXAS			
Evadale	(71)	East Texas Pulp and Paper Co.	250

1/ Corresponds to numbers at mill locations in figure 1.

2/ Southern Pulp and Paper Manufacturer, and other sources.

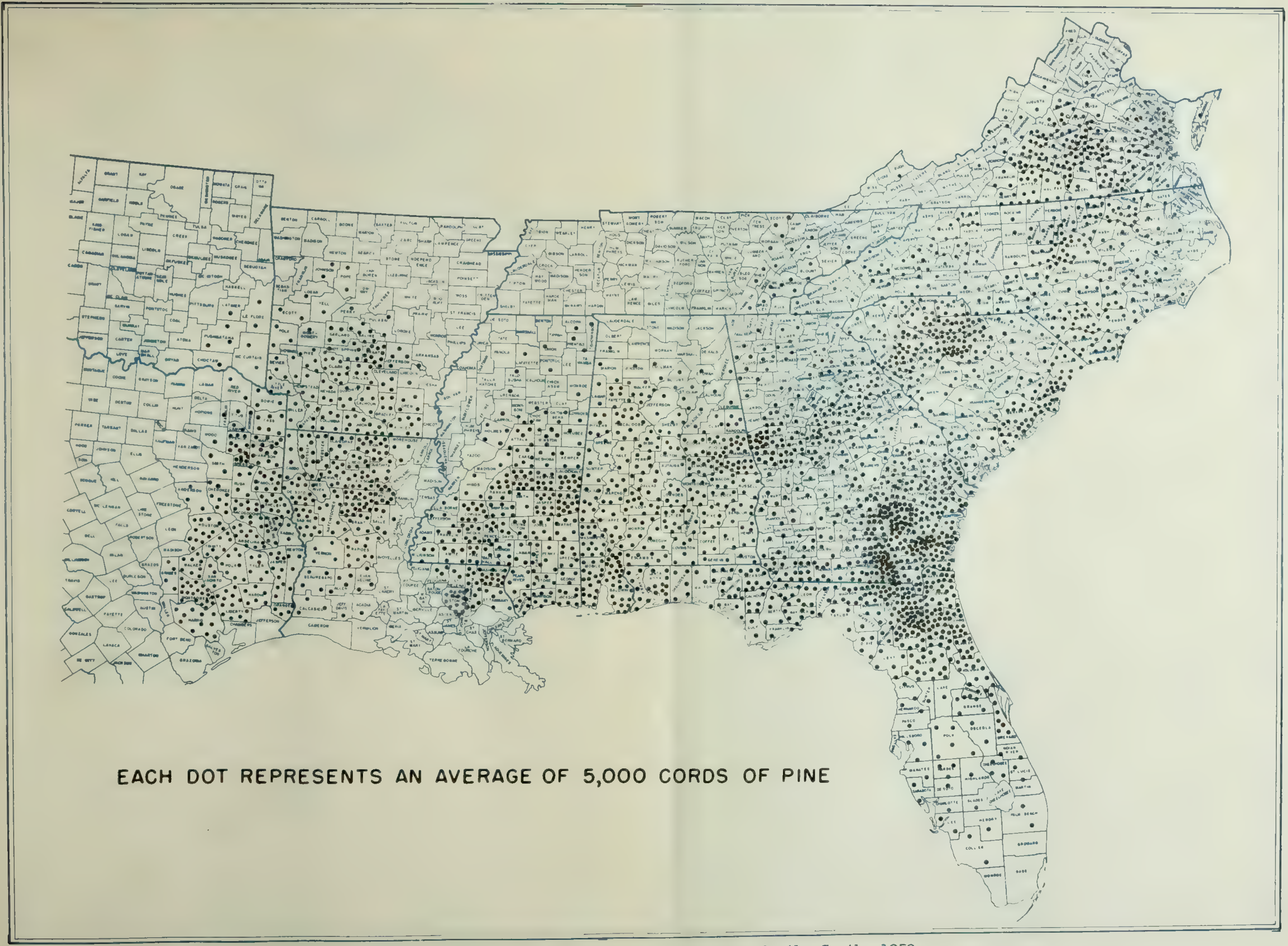

Figure 3.--Pine pulpwood production by county in the South, 1953

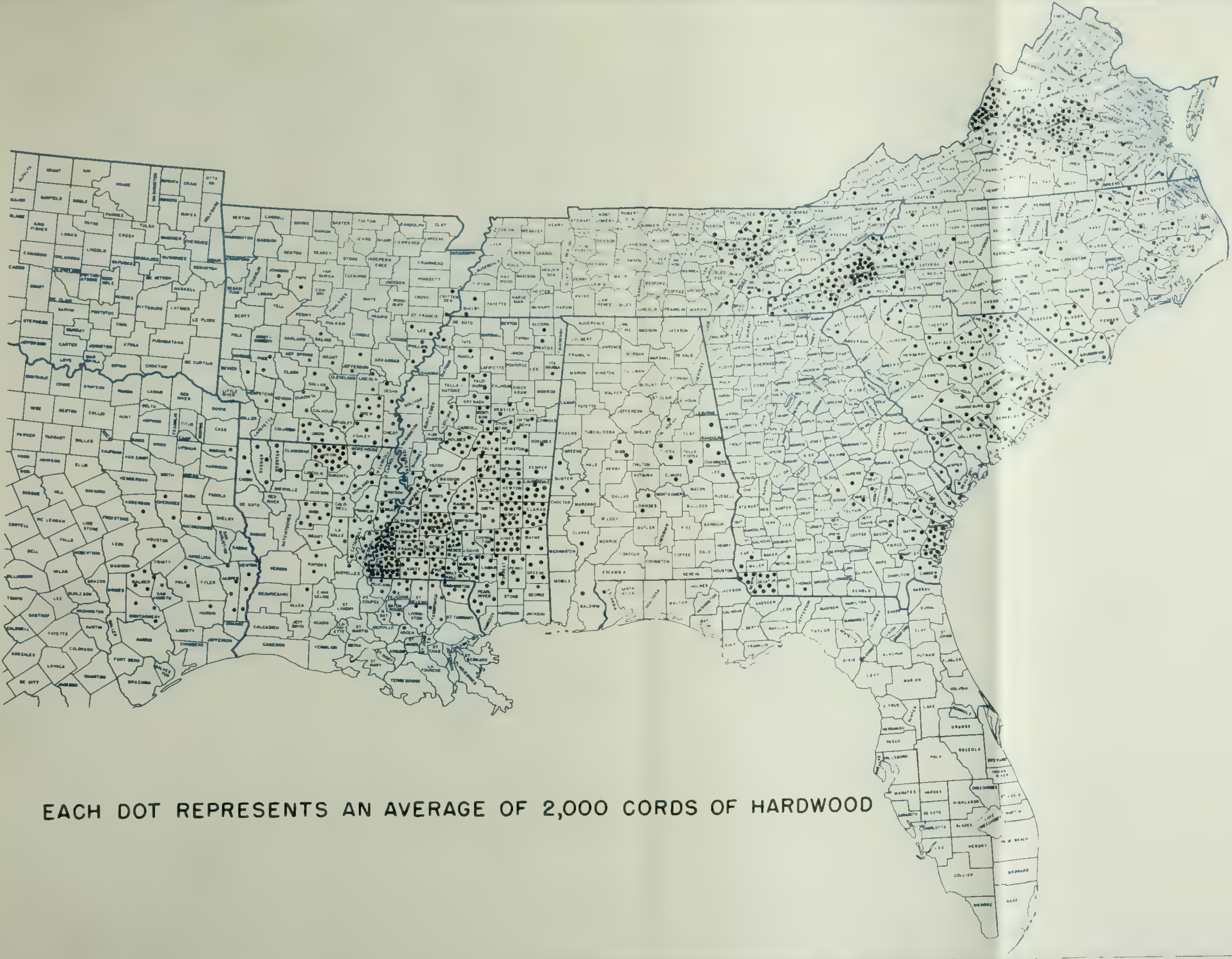

Figure 4.--Hardwood pulpwood production by county in the South, 1953

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NOVEMBER 1954

FOREST STATISTICS FOR GEORGIA, 1951 - 53

by
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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act though the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The first inventory of forest resources in the State of Georgia by the Forest Survey was made during the period 1934-36, and these findings have been published. Since then, the effects of forest growth, timber cutting, changes in land use, and other factors have caused rapid changes in the growing stock which can only be measured by on-the-ground surveys. A resurvey of the forest resources in Georgia was started in July 1950 and field work was completed in November 1953. This report presents statistics on forest area, timber volume, growth, and timber cut which were compiled from the resurvey.

ACKNOWLEDGMENTS

The Southeastern Station wishes to acknowledge the cooperation and assistance furnished by State Forester Guyton DeLoach, the University of Georgia School of Forestry, the Macon Kraft Company, the St. Regis Paper Company, the Union Bag and Paper Corporation, and the West Virginia Pulp and Paper Company in providing additional personnel to increase the rate of progress on the field survey.

The Division of Forest Economics is under the direction of James W. Cruikshank. Collection of the field data was supervised by Mackay B. Bryan and L. C. Nix. Photo interpretation was done by R. C. Aldrich. Office compilation of the data was under the direction of Agnes Nichols, assisted by Camilla Young, Louise Shuford, Sammy Wenningham, and Eunice Gamble.

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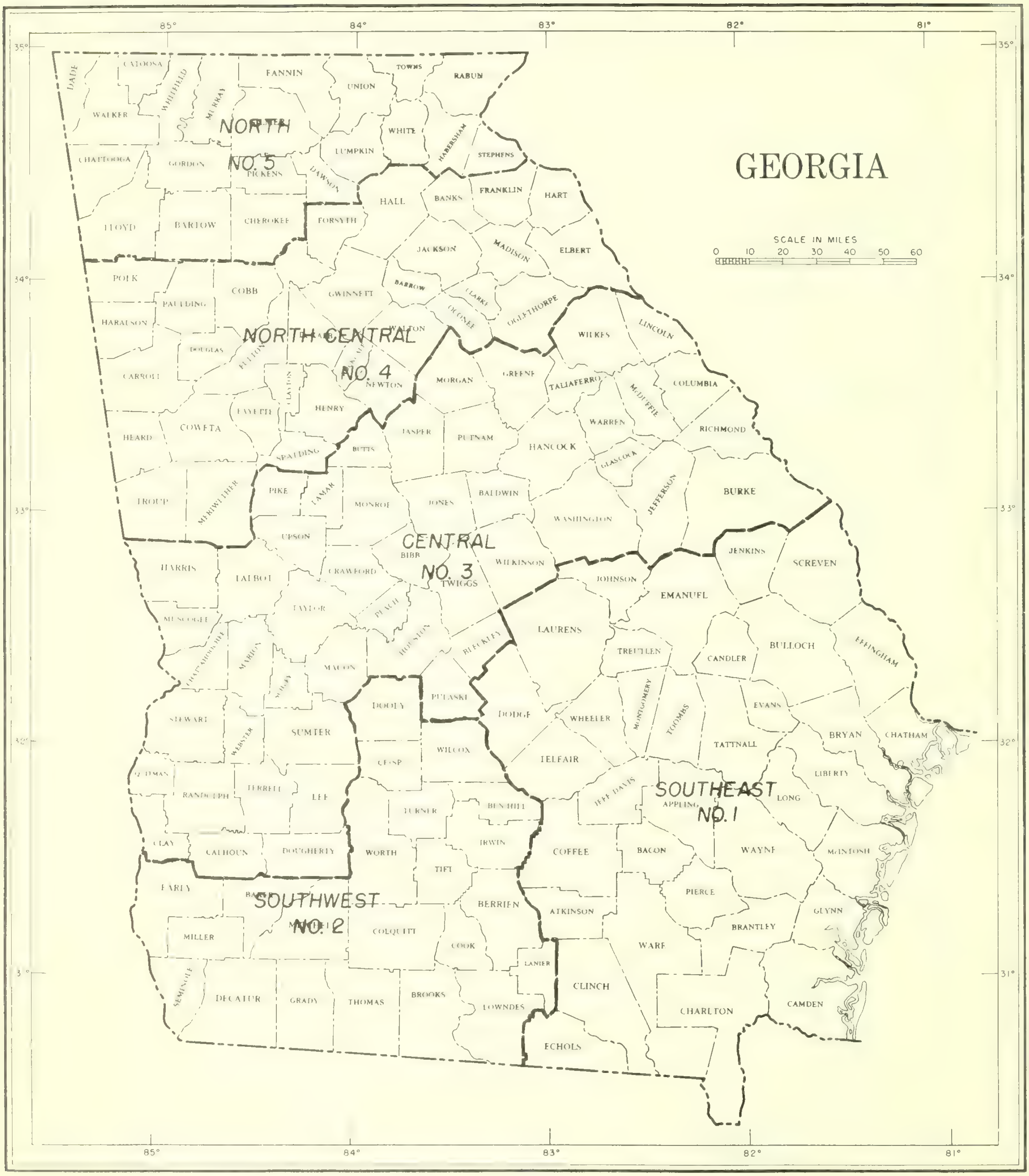

Figure 1.--Location of Forest Survey Units in Georgia

FOREST STATISTICS FOR GEORGIA, 1951-53

This report presents a summary of statistical data on forest area, timber volumes, and naval stores for the State of Georgia which have already been published in separate survey unit releases. It also contains information on timber growth and the amount of timber cut annually. These statistics were compiled from a resurvey of forest resources in Georgia which was started in July 1950 and completed in November 1953.

Basic information on forest conditions was obtained through the examination of 9,300 forest sample plots, one-fifth acre in size, distributed throughout all counties in the State. An additional 2,700 plots in nonforest conditions were examined to improve the accuracy of preliminary forest land area estimates made from aerial photographs. The methods used in selecting and examining the sample plots are described briefly on page 77.

Eighteen years have elapsed since the first inventory of Georgia's forest resources was completed in 1936. During this period, timber cutting, growth, better fire protection, and shifts in the pattern of land use have caused considerable change in the extent and composition of the forests. Comparisons of the statistics for both surveys have been made to point out some of these changes.

SIGNIFICANT FACTS AND TRENDS FROM THE 1951-53 SURVEY

Two acres out of every three are forest land.--The importance of the forest resource in Georgia is shown by the fact that forests are growing on two-thirds of the land in the State. According to the recent survey, forests now occupy 24.1 million acres, or 65 percent of the total land area. Croplands and pasture occupy 11.4 million acres, and the remaining area is in urban or other uses.

Nearly all the forest land is producing timber for commercial use. Less than 18 thousand acres are in parks or other areas where the timber is reserved, and only 70 thousand acres are on unproductive sites where trees of commercial size will not grow.

Ninety-three percent of the commercial timber land is in private ownership. Nearly 16 million acres are in farm woodlands, and about six and one-half million are held by lumber companies, pulp companies, estates, or other private owners. Public ownership of forest land amounts to 1.7 million acres, or 7 percent of the total. For the most part, these lands are in military reservations, power developments, and National Forest holdings.

Commercial forest land increases 2.6 million acres.--Land clearing for agricultural use and the reversion of cleared land to forest are opposing processes constantly at work in the State. In the 18-year period between surveys, the acreage of commercial forest land increased 2.6 million acres. This gain of 12 percent indicates that abandoned farmland has been going back to forest at a much faster rate than new land has been cleared.

Table A.--Change in commercial forest area

Survey unit	1934-36	1951-53	Change	
	Thousand acres	Thousand acres	Thousand acres	Percent
Southeast[1]	7,355.3	7,626.8	271.5	+ 4
Southwest	3,014.0	3,057.5	43.5	+ 1
Central	5,581.0	6,687.5	1,106.5	+20
North Central	2,549.0	3,521.9	972.9	+38
North	2,835.3	3,075.4	240.1	+ 8
State	21,334.6	23,969.1	2,634.5	+12

[1] Includes Okefenokee Swamp and coastal islands which were not surveyed in 1934.

This trend has been particularly strong in the Central and North Central units as shown in table A. These areas combined show an increase of more than 2 million acres.

Stands of pine timber predominate.--Fifty-eight percent of the forest land supports pine types. The loblolly pine type is the most extensive, occupying 4.8 million acres, or 20 percent of the wooded area in the State. Stands of slash and longleaf pine, located principally in the South Georgia Coastal Plain, cover a combined total of 6.2 million acres, or 26 percent. Hardwood forest types occupy a total of 10.1 million acres, being more prevalent in the Piedmont and Mountain areas.

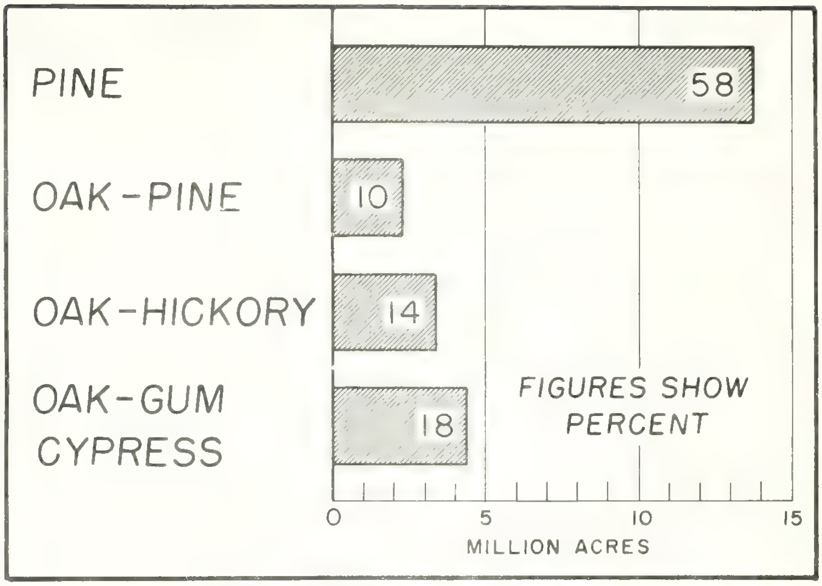

Figure 2.--Area of commercial forest land by forest type

One very consistent trend throughout the State is an increase in the proportion of hardwood stands and a decrease in pine. A comparison of type acreages for both surveys shows that 34 percent of the forested area is now in hardwood types, as compared to 22 percent during the first survey. In making this comparison, the 1936 system of classification was used in both surveys to eliminate differences due to type definitions. The trend has been quite similar in all survey units. Type conversion is brought about by cutting practices which leave hardwoods as the residual stand. About 15 percent of the pine type area that is cut over each year is changed to hardwood type by cutting.

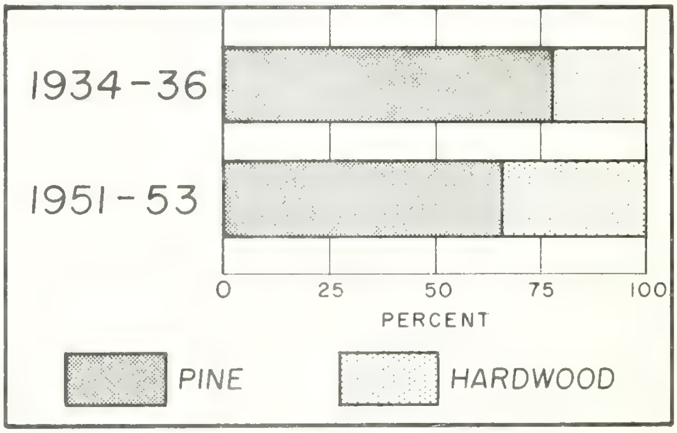

Figure 3.--Proportion of forest land by broad type

One-fourth of forest land is poorly stocked.--The rate of timber production is low on nearly one-fourth of the commercial forest land in Georgia because of poor stocking conditions. Approximately

24 percent of the stands are less than 40 percent stocked with trees of commercial species including the small seedling and sapling sizes. About three-fourths of this area is expected to restock naturally, and 1.4 million acres will require planting to bring about full production of timber within a reasonable length of time. A portion of the area needing planting will have to be treated to remove a dense brush cover before planting will be practical.

Present stands contain many more small trees.--The structure of the present timber stands in Georgia shows the effects of two opposite trends at work during recent years. Heavy and extensive timber cutting operations have reduced the number of trees in the larger diameter classes. On the other hand, such measures as more intensive fire protection, planting, and conservative use of turpentine trees have permitted the establishment and growth of many million more small trees.

Stand tables listing the number of sound trees by species group and diameter for the two surveys show there are fewer pine trees 14 inches or larger in diameter and more pine trees 12 inches or smaller. The same trend is evident in the hardwood trees, but the point of change is slightly higher, falling between the 14- and 16-inch diameter classes.

Table B.--Comparison of numbers of sound trees

D.b.h. class (inches)	Yellow pines			Hardwoods		
	1934-36	1951-53	Change	1934-36	1951-53	Change
	Million trees	Million trees	Percent	Million trees	Million trees	Percent
2	1,098	1,615	+47	1,644	2,696	+64
4	536	830	+55	438	661	+51
6	311	441	+42	204	241	+18
8	217	277	+28	114	142	+25
10	131	162	+24	73	98	+34
12	82	86	+ 5	49	57	+16
14	44	36	-18	30	34	+13
16	21	14	-33	19	17	-11
18	10	5	-50	11	10	- 9
20+	10	3	-70	15	10	-33
Total	2,460	3,469	+41	2,597	3,966	+53

Although poor stocking conditions are present on a considerable area of forest land, the changes shown in table B indicate a general improvement in the stocking picture for the State as a whole. The large increase in small trees resulted in net gains of 41 percent for pines and 53 percent for hardwoods. This rising inventory of young timber will add materially to the growing stock and improve the rate of timber growth as the trees are recruited into merchantable size classes. There is still plenty of space in the woods for more trees to grow, and the general level of timber stocking should continue to improve providing conditions remain favorable. For the immediate future, however, losses in the larger tree sizes point toward a lack of sufficient pine sawtimber in some areas.

Sawtimber volume down 13 percent.--The demand for saw logs, pulpwood, and other forest products from Georgia's timber lands reached record-breaking levels during the interval between surveys. The pressure on the timber supply created by such heavy utilization reduced the volume of sawtimber by 5.7 billion board feet, or 13 percent, since 1934. The decline is present in all species groups, with the heaviest loss in pine (table C).

Table C.--Comparison of sawtimber volumes

Species group	1934-36[1]	1951-53	Change	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Yellow pines	25,202	21,351	3,851	-15
Other softwoods	1,906	1,761	145	- 8
Hardwoods	15,493	13,808	1,685	-11
All species	42,601	36,920	5,681	-13

[1] Original survey volumes have been recomputed to allow for differences in standards between surveys and to provide a uniform basis for comparison. Adjustment has been made for the Okefenokee Swamp and coastal islands which were not surveyed in 1934.

The use of pine sawtimber has been particularly heavy in the Piedmont and Mountain sections of the State. In the Central unit, pine volume decreased 38 percent, and in the Northern units, 47 percent. These reductions were partially offset by a 21-percent increase in Southeast Georgia, and a 3-percent increase in the Southwestern section. Hardwood sawtimber volume decreased in the Central and Southeastern sections and increased elsewhere in the State.

Two-thirds of sawtimber volume in softwood trees.--Southern yellow pine trees contain 58 percent of the present sawtimber volume in Georgia. Other softwood species, principally cypress, contain an additional 5 percent for a combined total which equals nearly two-thirds of the board-foot volume available. Slash pine is the most important individual species, making up nearly one-fifth of the entire volume. Loblolly pine is a close second, followed by longleaf pine, red oaks, blackgum, and other species.

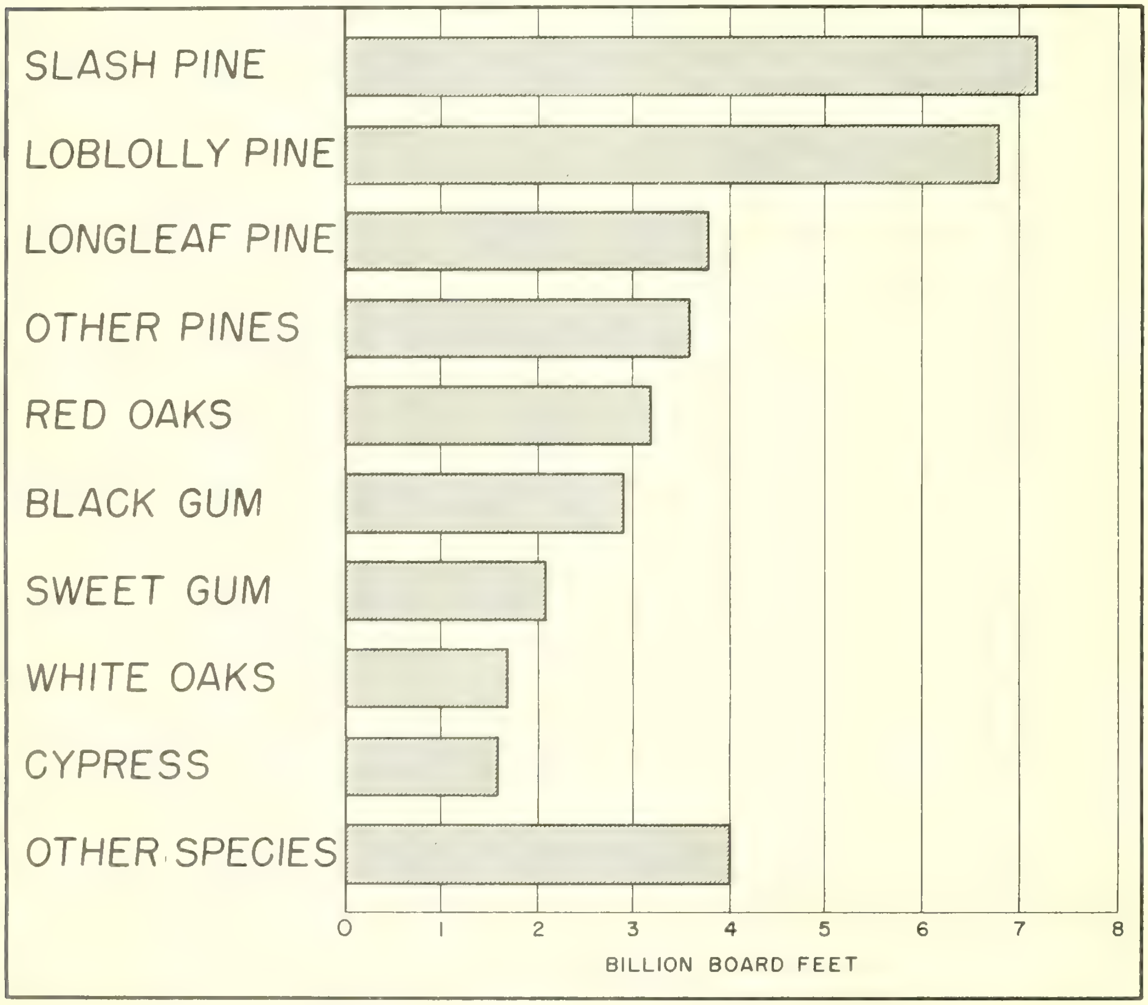

Figure 4.--Sawtimber volume by species

Sixty percent of the yellow pine sawtimber volume is in relatively small 10- and 12-inch diameter trees, and 94 percent is in trees less than 19 inches in size. This is in contrast with hardwood species, where one-fourth of the board-foot volume is in trees with diameters of 20 inches or more. The size of the average pine sawtimber tree is only 11.5 inches in diameter at 4.5 feet above ground.

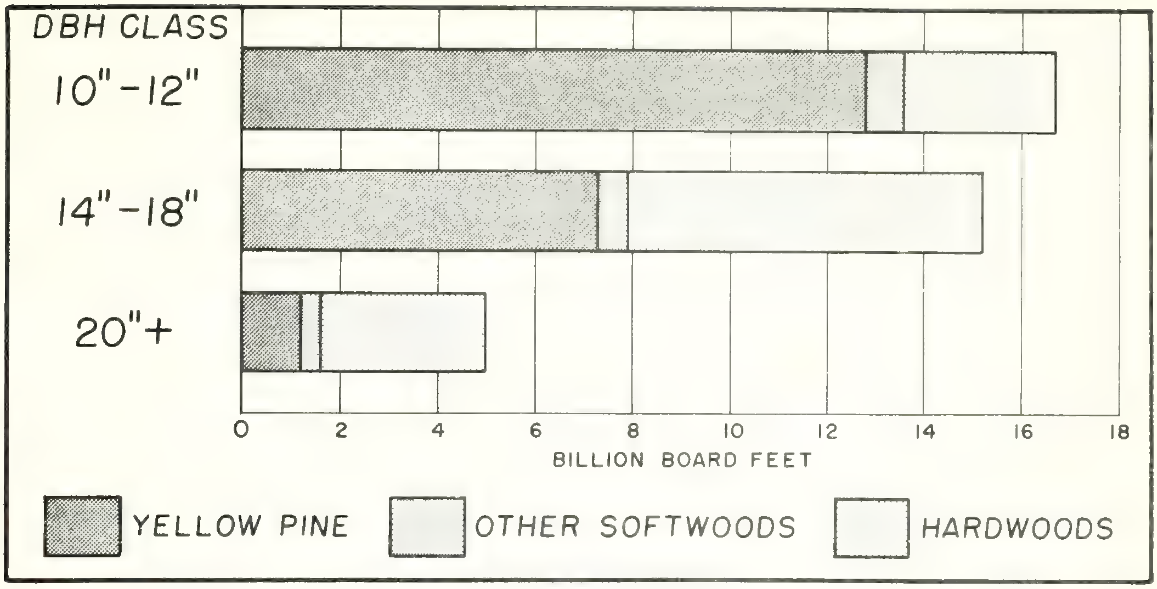

Figure 5.--Distribution of sawtimber volume by diameter class groups

Most hardwood sawtimber is of low quality.--Saw logs in hardwood trees were graded in the survey using Hardwood Log Grades for Standard Lumber developed by the Forest Products Laboratory. These rules take into account the size and soundness of the log, the number and location of knots, holes, scars, or other defects, and the extent of sweep or crook, if any. Only 8 percent of the volume in hardwood logs was graded as select or grade No. 1, and 16 percent was in grade No. 2. The remaining 76 percent fell into grade No. 3, which is composed of low-grade factory lumber logs, or logs suitable for the manufacture of crossties and timbers.

Saw logs in softwood species were graded under modified Crossett Log Grades, which depend primarily on log size, and the number and size of knots. Nearly three-fourths of the pine volume was found to be in grade No. 2 or better logs. Cypress and the other softwood species were of still better quality, with about 85 percent of the volume in grade No. 2 or better.

Volume of growing stock shows little change.--Growing stock volumes are computed in terms of cubic feet of solid wood. These estimates include all sound pole-size trees (starting at 5.0 inches in diameter) as well as the volume in the larger sawtimber trees. Trees smaller than 5 inches in diameter are considered seedlings or saplings and are not assigned volume in the timber inventory.

The volume of growing stock present at the time of each survey was found to be practically the same for the State as a whole. Pine volume was down a little and hardwood volume up slightly for a net loss of one percent. There was no change at all in the volume of other softwoods. However, as with sawtimber volume, there has been considerable change in pine growing stock volume in the individual survey units. In the Central and North Central units, pine volume was down 20 and 22 percent respectively. In the North unit, pine growing stock dropped 29 percent. The decline in these areas was nearly offset by increases in the southern sections of the State.

Table D.--Comparison of volume in all trees 5.0 inches d.b.h. and larger

GROWING STOCK

Species group	1934-36[1]	1951-53	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Yellow pines	7,403	7,254	149	-2
Other softwoods	519	519	0	0
Hardwoods	4,859	4,919	60	+1
All species	12,781	12,692	89	-1

CULL TREES

Species group	1934-36[1]	1951-53	Million cu. ft.	Percent
Yellow pines	169	818	649	+384
Other softwoods	103	98	5	- 5
Hardwoods[2]	1,563	2,780	1,217	+ 78
All species	1,835	3,696	1,861	+101

[1] See footnote 1, table C.

[2] Excludes limb volume of hardwood sawtimber trees.

The heavy rate of timber cutting and the surge of young ingrowth coming on have also created a shift in growing stock volume by tree-size class. For the State, the proportion of pine volume in pole-size trees has jumped from 25 to 34 percent during the 18-year period. Hardwood growing stock volume is following the same trend but at a slower rate than pine. This change is most pronounced in the North Central unit where half the pine growing stock now available is in trees 6 and 8 inches in diameter.

The amount of wood in low-quality cull trees has doubled during the past 18-year period. These trees are too crooked, limby, or rotten, to be cut into saw logs for lumber, but many of them can be used for the production of pulpwood, fence posts, or other forest products. The volume of cull trees in the stands tends to build up because they are seldom harvested during sawlog cutting operations. It now amounts to 23 percent of the total cubic volume in the State as compared to 13 percent in 1934. The influence of these changes in tree quality and tree size as they affect timber volumes is shown in figure 6.

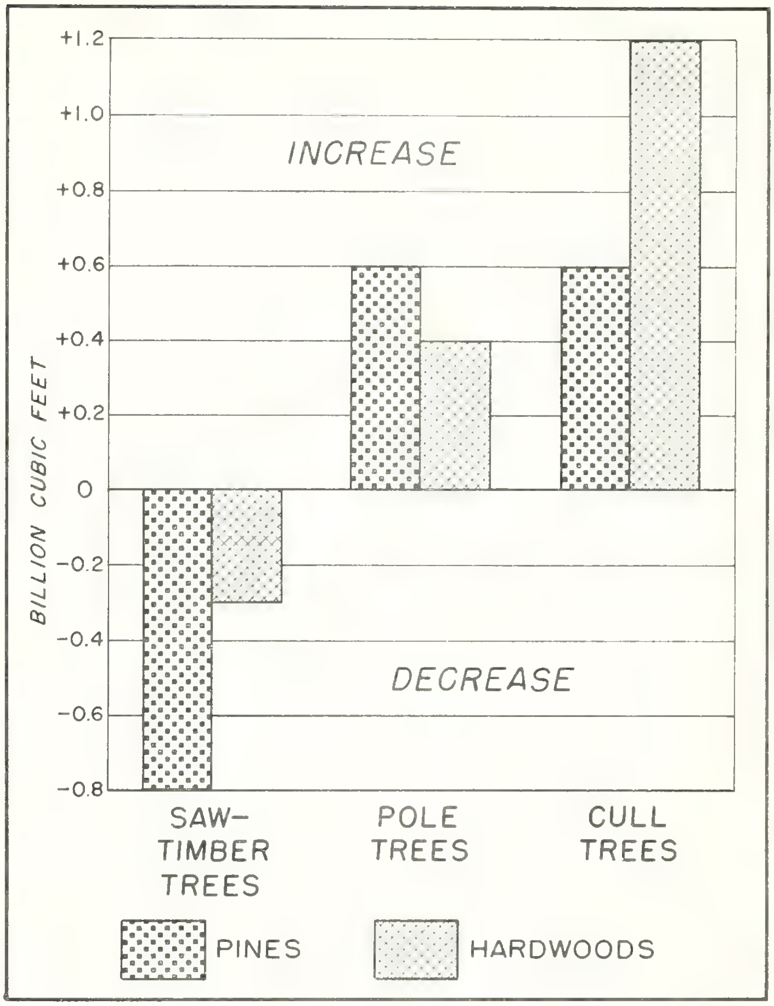

Figure 6.--Change in timber volumes by class of material

Gum naval stores important in South Georgia.--The practice of facing longleaf and slash pine trees for the production of gum naval stores is a widespread activity throughout the Southern Coastal Plain area of the State. Crops of working, resting, or worked-out timber were found on 35 percent of the acreage in the turpentine types. In the 1951-52 season a total of 904 thousand barrels of crude gum were collected and manufactured into 190 thousand barrels of turpentine and 552 thousand drums of rosin.

About 27 percent of the longleaf and slash pine trees 9.0 inches or larger in diameter were being worked for naval stores. An additional 14 percent were in the resting stage and 7 percent were worked out. The remainder, 52 percent, had not been faced. Only 4 percent of all the trees being worked were smaller than 9.0 inches in diameter.

Since 1934 there has been a marked decline in naval stores activity in South Georgia. The area occupied by turpentined timber crops is now only one-third of the area being worked at the time of the original survey. Also, the number of working trees in the stands has been reduced from about 65 million to 47 million.

Annual growth of sawtimber is 3.2 billion board feet, of growing stock 12.6 million cords.--The yearly increase of sawtimber volume in Georgia resulting from growth of all species amounted to 3.2 billion board feet. Pine sawtimber is being produced at the rate of 2.3 billion feet per year, or 73 percent of the annual increase. The reason pine growth exceeds that of other species groups is twofold. Pine makes up a higher proportion of the timber volume in the State, and it also grows at a much faster rate.

The annual increase of growing stock volume, including all sound trees 5.0 inches d.b.h. and larger, amounted to 12.6 million rough cords, or 867 million cubic feet, of solid wood. Southern yellow pine was again the leading species, but the volume produced represented only 66 percent of the total increase.

Table E.--Net annual growth by species group

Species group	Sawtimber	Growing stock	
	Million bd. ft.	Million cu. ft.	Thousand cords
Yellow pines	2,288	573	8,365
Other softwoods	58	15	197
Soft hardwoods	478	166	2,366
Hard hardwoods	327	113	1,638
All species	3,151	867	12,566

Estimates of growth are based on the examination of thousands of increment cores taken from sample trees in all sections of the State. These cores indicate the rate of tree diameter growth, and also the number of young trees expected to reach volume size during the course of a year, thus creating ingrowth. The volume of timber mortality, or death of trees from natural causes, is deducted from total growth to arrive at net growth estimates.

On a per-acre basis, stands of slash pine were the highest producers, with an average of 216 board feet, or seven-tenths of a cord per year. The average growth of all stands was 136 board feet, or six-tenths of a cord per acre per year.

The rates of timber growth, particularly pines, are excellent for all areas of the State. Annual growth percentages for pine sawtimber range from 10 to 13 percent, and for pine growing stock, from 7 to 10 percent. However, it is important to note that the actual volume increase in any forest type or condition depends on the degree of stocking as well as on the rate of growth. The growth percentages are higher in Central and North Georgia, but the forests in South Georgia are producing more timber per acre because the stands are better stocked.

A large volume of timber is cut annually.--For the entire State, the volume of sawtimber cut for all purposes amounted to 3.0 billion board feet. The cut of growing stock material, including both poletimber and sawtimber trees, totaled 10 million cords, or 779 million cubic feet of wood. Fuelwood and fence posts cut for domestic or farm use are included in these estimates as well as saw logs and other commercial products. The pressure of this cutting was heaviest on the pine timber supply, with approximately four-fifths of the production coming from this species.

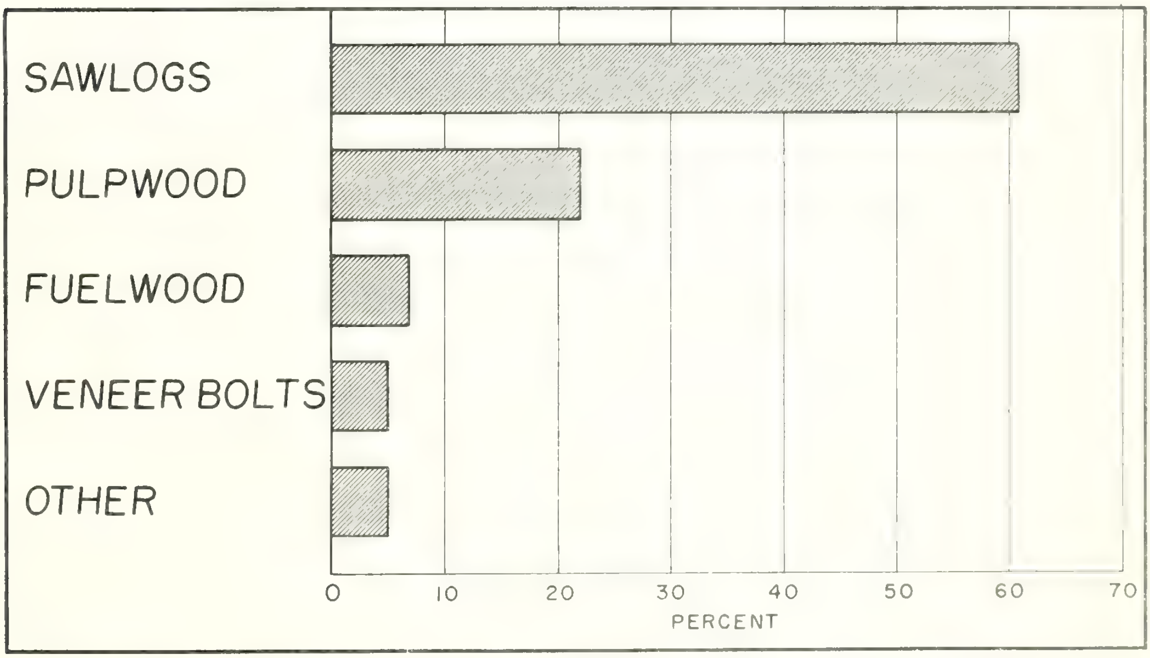

Figure 7.--Distribution of 1952 timber cut by product

The leading product, as shown in figure 7, is saw logs for the manufacture of lumber. Pulpwood is second in importance, and the combined cut of saw logs and pulpwood equals 83 percent of the volume cut for all products. In 1952 the production of lumber hit an all-time high and the volume of pulpwood produced has been increasing steadily in recent years. The amount of fuelwood, cooperage, and hewn ties produced in the State has been on the decline.

Volume of pine sawtimber cut exceeds growth.--Because of continuing heavy demand, yellow pine sawtimber volume in Georgia is still dropping at nearly the same average rate which took place during the period between surveys. The annual volume loss during the resurvey was 0.7 percent, while the average decline since 1934 has been 0.8 percent per year. This statewide figure is a balance resulting from opposite trends in the individual survey units. The decrease in pine volume is concentrated in the Central and Northern sections of the State as shown in figure 8. The most severe reduction occurred in the North Central unit, where the rate of decline was 7 percent annually. The excess of pine sawtimber growth over volume cut in the Southern units has had a counterbalancing effect. The board-foot volume of other species groups in the State is increasing.

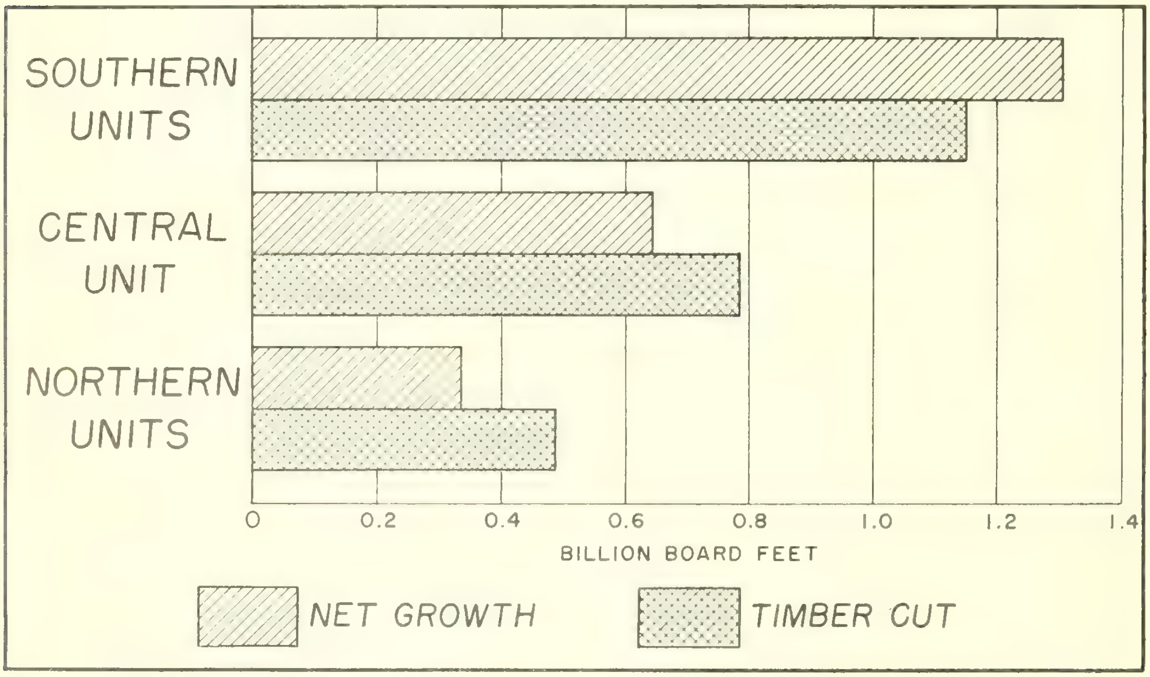

Figure 8.--Annual yellow pine sawtimber growth and amount cut by survey units

Table 1.--Gross area[1] by broad use class

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	23,969.1	63.6
Noncommercial:		
Productive-reserved	17.7	(4/)
Unproductive	69.8	0.2
Total forest	24,056.6	63.8
Nonforest land:		
Agriculture	11,351.9	30.1
Marsh	493.7	1.3
Urban and other[2]	1,297.1	3.5
Total nonforest	13,142.7	34.9
Total land area	37,199.3	98.7
Total water area[3]	481.3	1.3
All classes	37,680.6	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[3] Includes 251,500 acres of Census water as of 1950 and 51,600 acres of Census water area created since 1950. Also includes 178,200 acres of water in small streams and lakes defined by the Bureau of the Census as land area (see Definition of Terms).

[4] Less than 0.05 percent.

Table 2.--Ownership[1] of commercial forest land

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	640.9	2.7
Indian	--	--
Bureau of Land Management	--	--
Other Federal	916.4	3.8
Total Federal	1,557.3	6.5
State	101.6	0.4
County and municipal	23.1	0.1
Total public	1,682.0	7.0
Private land:		
Farm	15,854.3	66.2
Other	6,432.8	26.8
Total private	22,287.1	93.0
All classes	23,969.1	100.0

[1] Adjusted to January 1, 1953.

Table 3.--Commercial forest area by forest type and stand-size class

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	52.9	635.6	1,001.4	616.9	425.0	2,731.8
Slash pine	97.1	1,263.1	998.8	982.5	172.5	3,514.0
Loblolly pine	250.8	886.4	1,831.7	1,678.7	153.6	4,801.2
Shortleaf pine	39.2	327.9	1,126.3	658.4	29.7	2,181.5
Pond pine	17.0	43.6	90.6	119.9	41.9	313.0
Virginia pine	6.5	33.8	93.5	115.8	8.1	257.7
White pine	5.6	--	16.8	--	--	22.4
Total	469.1	3,190.4	5,159.1	4,172.2	830.8	13,821.6
Other types:						
Oak-pine	204.4	287.1	919.6	797.8	128.2	2,337.1
Oak-hickory:						
Upland hdwds.	406.7	201.9	1,285.8	851.1	106.2	2,851.7
Scrub oak	3.5	--	5.5	114.3	414.5	537.8
Oak-gum-cypress:						
Lowland hdwds.	798.7	642.9	1,325.5	1,140.2	105.3	4,012.6
Cypress	36.4	114.1	119.0	124.2	14.6	408.3
Total	1,449.7	1,246.0	3,655.4	3,027.6	768.8	10,147.5
All types	1,918.8	4,436.4	8,814.5	7,199.8	1,599.6	23,969.1
Percent	8.0	18.5	36.8	30.0	6.7	100.0

[1] See description of forest types and stand-size classes under Definition of Terms.

Table 4.--Net volume[1] of sawtimber by species and stand-size class

(In million board feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	287.2	2,017.2	961.5	394.1	176.5	3,836.5
Slash pine	666.1	4,747.4	1,118.8	581.6	101.8	7,215.7
Loblolly pine	1,618.9	3,213.1	1,503.5	387.0	58.9	6,781.4
Pond pine	64.3	180.5	132.4	98.3	32.7	508.2
Shortleaf pine	312.6	1,334.0	887.7	210.2	5.9	2,750.4
Virginia pine	50.6	114.4	70.2	23.7	--	258.9
Total	2,999.7	11,606.6	4,674.1	1,694.9	375.8	21,351.1
White pine	50.6	26.0	44.7	--	--	121.3
Hemlock	48.6	--	--	--	--	48.6
Cypress	517.3	690.5	242.5	104.2	11.7	1,566.2
Cedar	1.3	3.1	13.4	5.2	1.6	24.6
Total sftwds.	3,617.5	12,326.2	4,974.7	1,804.3	389.1	23,111.8
Hardwoods:						
Bl. & tupelo gum	1,134.2	1,118.3	471.6	177.8	17.2	2,919.1
Sweetgum	995.0	539.3	436.1	133.2	3.8	2,107.4
Yellow-poplar	584.4	341.2	236.3	55.9	2.7	1,220.5
Soft maple	168.1	139.0	117.7	18.8	--	443.6
Other soft hdwds.	229.0	166.1	114.1	33.4	2.0	544.6
Total	3,110.7	2,303.9	1,375.8	419.1	25.7	7,235.2
White & swamp chestnut oaks	392.9	158.2	260.8	25.7	--	837.6
Other white oaks	405.4	129.5	224.7	71.4	10.5	841.5
No. red, swamp red, & shumard oaks	265.9	69.8	122.4	13.3	27.2	498.6
Other red oaks	1,202.3	573.0	687.2	173.5	16.0	2,652.0
Hickory	395.5	131.6	268.4	63.1	5.1	863.7
Ash	144.7	79.4	62.7	7.1	--	293.9
Other hard hdwds.	302.3	126.2	132.4	25.1	--	586.0
Total	3,109.0	1,267.7	1,758.6	379.2	58.8	6,573.3
Total hdwds.	6,219.7	3,571.6	3,134.4	798.3	84.5	13,808.5
All species	9,837.2	15,897.8	8,109.1	2,602.6	473.6	36,920.3
Percent	26.6	43.1	22.0	7.0	1.3	100.0

[1] Log scale, International 1/4-inch rule.

[2] See Definition of Terms for species combined with others.

Table 5.--Net volume[1] of sawtimber by species and diameter class

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	2,630.3	1,081.9	124.0	0.3	[illegible]	10.4
Slash pine	4,584.6	[illegible]	224.6	14.0	[illegible]	[illegible]
Loblolly pine	3,285.9	2,741.8	649.0	[illegible]	[illegible]	18.4
Pond pine	235.8	237.6	34.8	--	508.2	1.4
Shortleaf pine	1,912.6	771.8	66.0	--	2,750.4	7.4
Virginia pine	166.1	92.8	--	--	258.9	0.7
Total	12,815.3	[illegible]	1,098.4	117.0	21,351.1	57.8
White pine	36.5	55.3	[illegible]	--	121.3	0.3
Hemlock	--	5.2	--	43.4	48.6	0.1
Cypress	729.6	530.6	235.6	70.4	1,566.2	4.3
Cedar	17.3	7.3	--	--	24.6	0.1
Total sftwds.	13,598.7	[illegible]	1,363.5	230.8	23,111.8	62.6
Hardwoods:						
Bl. & tupelo gum	848.9	1,643.1	[illegible]	92.1	2,919.1	7.9
Sweetgum	485.2	[illegible]	[illegible]	[illegible]	2,107.4	5.7
Yellow-poplar	253.5	687.3	225.0	54.7	1,220.5	3.3
Soft maple	110.3	292.3	41.0	--	[illegible]	1.2
Other soft hdwds.	132.6	[illegible]	[illegible]	14.0	544.6	[illegible]
Total	1,830.5	4,140.5	[illegible]	270.7	[illegible]	19.6
White & swamp chestnut oaks	161.4	[illegible]	189.2	102.0	837.6	[illegible]
Other white oaks	174.0	359.1	171.6	136.8	841.5	[illegible]
No. red, swamp red, & shumard oaks	70.8	230.3	119.1	78.4	498.6	[illegible]
Other red oaks	492.5	1,274.0	562.6	[illegible]	2,652.0	[illegible]
Hickory	205.3	401.4	172.4	84.6	863.7	[illegible]
Ash	74.4	191.8	27.7	--	[illegible]	0.8
Other hard hdwds.	132.3	289.9	108.1	55.7	586.0	1.6
Total	1,310.7	[illegible]	[illegible]	780.4	6,573.3	17.8
Total hdwds.	3,141.2	7,272.0	2,344.2	1,051.1	13,808.5	[illegible]
All species	[illegible]	15,190.8	[illegible]	1,281.9	36,920.3	100.0
Percent	[illegible]	41.2	[illegible]	[illegible]	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class

(In million board feet)

Forest type[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	248.6	1,914.5	871.8	239.2	153.3	3,427.4
Slash pine	587.4	5,061.0	1,056.4	481.9	108.6	7,295.3
Loblolly pine	1,446.0	3,249.2	1,301.3	240.1	54.8	6,291.4
Shortleaf pine	206.4	1,198.5	808.8	98.6	2.2	2,314.5
Pond pine	53.9	100.3	115.5	35.1	26.8	331.6
Virginia pine	38.5	102.6	54.0	22.6	1.4	219.1
White pine	43.5	--	33.1	--	--	76.6
Total	2,624.3	11,626.1	4,240.9	1,117.5	347.1	19,955.9
Other types:						
Oak-pine	1,014.7	936.5	845.6	326.8	25.8	3,149.4
Oak-hickory:						
Upland hdwds.	1,595.8	549.8	1,180.0	302.4	28.7	3,656.7
Scrub oak	1.5	--	0.6	20.2	25.8	48.1
Oak-gum-cypress:						
Lowland hdwds.	4,300.2	2,303.8	1,651.8	768.2	35.0	9,059.0
Cypress	300.7	481.6	190.2	67.5	11.2	1,051.2
Total	7,212.9	4,271.7	3,868.2	1,485.1	126.5	16,964.4
All types	9,837.2	15,897.8	8,109.1	2,602.6	473.6	36,920.3
Percent	26.6	43.1	22.0	7.0	1.3	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes under Definition of Terms.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd. ft.	Percent	Million bd. ft.	Percent	Million bd. ft.	Percent
PINE						
Grade 1	738.5	4.4	1,182.8	25.9	1,921.3	9.0
Grade 2	11,732.2	69.9	1,908.9	41.8	13,641.1	63.9
Grade 3	4,313.6	25.7	1,475.1	32.3	5,788.7	27.1
Total	16,784.3	100.0	4,566.8	100.0	21,351.1	100.0
OTHER SOFTWOODS						
Grade 1	118.9	10.9	318.0	47.5	436.9	24.8
Grade 2	817.2	74.9	245.1	36.6	1,062.3	60.3
Grade 3	155.0	14.2	106.5	15.9	261.5	14.9
Total	1,091.1	100.0	669.6	100.0	1,760.7	100.0
HARDWOODS						
Grade 1	12.5	0.2	1,138.5	15.1	1,151.0	8.3
Grade 2	445.1	7.1	1,794.4	23.8	2,239.5	16.2
Grade 3	5,811.4	92.7	4,606.6	61.1	10,418.0	75.5
Total	6,269.0	100.0	7,539.5	100.0	13,808.5	100.0

[1] Ten-inch hardwoods are not included.

Table 8.--Net volume[1] of all timber by species and stand-size class

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	775	7,782	5,818	1,816	645	16,836
Slash pine	2,138	19,967	9,001	2,447	357	33,910
Loblolly pine	4,277	12,403	11,849	1,911	169	30,609
Pond pine	173	709	644	429	105	2,060
Shortleaf pine	962	5,786	8,409	1,133	25	16,315
Virginia pine	188	488	590	126	--	1,392
Total	8,513	47,135	36,311	7,862	1,301	101,122
White pine	139	54	182	--	--	375
Hemlock	90	--	--	--	--	90
Cypress	1,277	2,693	1,278	489	30	5,767
Cedar	4	14	50	18	5	91
Total sftwds.	10,023	49,896	37,821	8,369	1,336	107,445
Hardwoods:						
Bl. & tupelo gum	4,291	6,297	4,141	908	51	15,688
Sweetgum	3,381	2,804	3,666	629	10	10,490
Yellow-poplar	1,826	1,380	1,505	306	42	5,059
Soft maple	779	762	995	157	--	2,693
Other soft hdwds.	844	783	782	150	8	2,567
Total	11,121	12,026	11,089	2,150	111	36,497
White & swamp chestnut oaks	1,271	846	1,908	151	--	4,176
Other white oaks	1,311	684	1,789	299	46	4,129
No. red, swamp red, & shumard oaks	689	286	640	65	66	1,746
Other red oaks	3,634	2,362	4,841	782	45	11,664
Hickory	1,365	657	1,687	205	28	3,942
Ash	486	473	650	20	--	1,629
Dogwood, persimmon	144	83	256	37	4	524
Other hard hdwds.	995	639	989	110	--	2,733
Total	9,895	6,030	12,760	1,669	189	30,543
Total hdwds.	21,016	18,056	23,849	3,819	300	67,040
All species	31,039	67,952	61,670	12,188	1,636	174,485
Percent	17.8	39.0	35.3	7.0	0.9	100.0

OTHER MATERIAL

Sound culls						
Softwoods	299	2,227	5,595	2,947	473	11,541
Hardwoods[2]	5,900	4,969	11,737	6,211	1,608	30,425
Rotten culls	2,071	2,006	2,962	1,318	185	8,542
Hardwood limbs	4,232	2,674	3,162	1,133	197	11,398
Total other material	12,502	11,876	23,456	11,609	2,463	61,906

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 9.--Net volume1/ of all timber by species and diameter class

(In thousand cords)

GROWING STOCK

Species	Pole trees		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	1,773	3,743	4,360	3,682	2,986	292	16,836
Slash pine	4,196	7,229	7,855	7,071	6,959	600	33,910
Loblolly pine	4,631	6,926	5,396	4,921	7,041	1,694	30,609
Pond pine	240	369	388	347	635	81	2,060
Shortleaf pine	3,681	4,654	3,537	2,325	1,968	150	16,315
Virginia pine	367	308	250	241	226	--	1,392
Total	14,888	23,229	21,786	18,587	19,815	2,817	101,122
White pine	37	60	44	56	119	59	375
Hemlock	--	--	--	--	11	79	90
Cypress	586	1,036	1,041	1,118	1,332	654	5,767
Cedar	17	4	31	21	18	--	91
Total sftwds.	15,528	24,329	22,902	19,782	21,295	3,609	107,445
Hardwoods:							
Bl. & tupelo gum	1,517	2,489	3,528	2,627	4,473	1,054	15,688
Sweetgum	1,180	1,545	2,035	1,511	3,150	1,069	10,490
Yellow-poplar	408	575	801	776	1,820	679	5,059
Soft maple	371	569	505	361	786	101	2,693
Other soft hdwds.	249	409	462	386	887	174	2,567
Total	3,725	5,587	7,331	5,661	11,116	3,077	36,497
White & swamp chestnut oaks	400	662	833	523	1,042	716	4,176
Other white oaks	542	678	675	553	946	735	4,129
No. red, swamp red, & shumard oaks	138	114	201	220	607	466	1,746
Other red oaks	1,239	1,661	1,766	1,542	3,332	2,124	11,664
Hickory	337	755	501	639	1,077	633	3,942
Ash	183	267	353	247	509	70	1,629
Dogwood, persimmon	282	126	47	23	46	--	524
Other hard hdwds.	259	353	574	402	748	397	2,733
Total	3,380	4,616	4,950	4,149	8,307	5,141	30,543
Total hdwds.	7,105	10,203	12,281	9,810	19,423	8,218	67,040
All species	22,633	34,532	35,183	29,592	40,718	11,827	174,485
Percent	13.0	19.8	20.2	16.9	23.3	6.8	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	1,637	1,887	2,848	2,168	2,650	351	11,541
Hardwoods2/	4,648	5,373	5,799	3,837	6,894	3,874	30,425
Rotten culls	554	920	959	764	2,488	2,857	8,542
Hardwood limbs	--	--	--	2,698	5,717	2,983	11,398
Total other material	6,839	8,180	9,606	9,467	17,749	10,065	61,906

1/ Sound wood and bark.

2/ Includes noncommercial species.

Table 10.--Net volume[1] of all timber by species and class of material

(In thousand cords)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	9,163	2,157	5,516	16,836	918	46
Slash pine	18,169	4,316	11,425	33,910	905	84
Loblolly pine	15,383	3,669	11,557	30,609	5,878	101
Pond pine	1,171	280	609	2,060	247	68
Shortleaf pine	6,451	1,529	8,335	16,315	2,306	1
Virginia pine	576	141	675	1,392	827	--
Total	50,913	12,092	38,117	101,122	11,081	300
White pine	218	60	97	375	94	--
Hemlock	74	16	--	90	--	--
Cypress	3,268	877	1,622	5,767	337	663
Cedar	49	21	21	91	29	3
Total sftwds.	54,522	13,066	39,857	107,445	11,541	966
Hardwoods:						
Bl. & tupelo gum	6,514	1,640	7,534	15,688	7,024	2,902
Sweetgum	4,571	1,159	4,760	10,490	3,422	798
Yellow-poplar	2,622	653	1,784	5,059	1,565	226
Soft maple	1,008	240	1,445	2,693	3,275	929
Other soft hdwds.	1,161	286	1,120	2,567	1,870	639
Total	15,876	3,978	16,643	36,497	17,156	5,494
White & swamp chestnut oaks	1,797	494	1,895	4,176	1,617	143
Other white oaks	1,781	453	1,895	4,129	4,690	397
No. red, swamp red, & shumard oaks	1,025	268	453	1,746	962	67
Other red oaks	5,531	1,467	4,666	11,664	7,475	1,948
Hickory	1,878	471	1,593	3,942	2,419	122
Ash	662	164	803	1,629	841	198
Dogwood, persimmon	57	12	455	524	230	23
Scrub oak[3]	--	--	--	--	3,386	--
Other hard hdwds.	1,229	318	1,186	2,733	2,004	227
Total	13,960	3,637	12,946	30,543	23,624	3,125
Total hdwds.	29,836	7,615	29,589	67,040	40,780	8,619
All species	84,358	20,681	69,446	174,485	52,321	9,585
Percent	48.3	11.9	39.8	100.0	84.5	15.5

[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	662	7,404	5,660	1,138	525	15,389
Slash pine	1,970	22,027	8,856	2,243	349	35,445
Loblolly pine	4,213	13,689	12,469	1,539	176	32,086
Shortleaf pine	672	5,083	7,384	564	13	13,716
Pond pine	144	339	560	221	83	1,347
Virginia pine	99	459	591	103	4	1,256
White pine	161	--	128	--	--	289
Total	7,921	49,001	35,648	5,808	1,150	99,528
Other types:						
Oak-pine	3,204	3,972	5,693	1,517	132	14,518
Oak-hickory:						
Upland hdwds.	5,171	2,533	7,753	1,252	102	16,811
Scrub oak	19	--	6	64	121	210
Oak-gum-cypress:						
Lowland hdwds.	14,023	10,413	11,316	3,293	103	39,148
Cypress	701	2,033	1,254	254	28	4,270
Total	23,118	18,951	26,022	6,380	486	74,957
All types	31,039	67,952	61,670	12,188	1,636	174,485
Percent	17.8	39.0	35.3	7.0	0.9	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	97	331	492	249	224	1,393
Slash pine	201	1,541	655	443	67	2,907
Loblolly pine	739	1,871	4,248	2,343	299	9,500
Shortleaf pine	369	778	2,116	806	22	4,091
Pond pine	18	41	44	81	27	211
Virginia pine	45	115	397	249	42	848
White pine	6	--	76	--	--	82
Total	1,475	4,677	8,028	4,171	681	19,032
Other types:						
Oak-pine	1,087	1,178	2,749	1,263	139	6,416
Oak-hickory:						
Upland hdwds.	2,495	968	4,918	2,453	289	11,123
Scrub oak	--	--	6	193	652	851
Oak-gum-cypress:						
Lowland hdwds.	7,316	4,723	7,453	3,386	684	23,562
Cypress	129	330	302	143	18	922
Total	11,027	7,199	15,428	7,438	1,782	42,874
All types	12,502	11,876	23,456	11,609	2,463	61,906
Percent	20.2	19.2	37.9	18.7	4.0	100.0

---

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class

(In million cubic feet)

GROWING STOCK

Species	Pole trees		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	104.4	251.8	319.3	281.5	237.1	24.6	1,218.7
Slash pine	246.8	483.8	570.9	536.4	555.0	50.9	2,443.8
Loblolly pine	272.2	465.6	392.5	374.5	564.0	144.1	2,212.9
Pond pine	14.0	24.8	27.4	26.4	50.8	7.0	150.4
Shortleaf pine	215.9	313.2	257.4	175.8	156.2	12.6	1,131.1
Virginia pine	21.6	20.7	18.2	18.6	18.1	--	97.2
Total	874.9	1,559.9	1,585.7	1,413.2	1,581.2	239.2	7,254.1
White pine	2.4	4.5	3.5	4.6	10.6	5.5	31.1
Hemlock	--	--	--	--	1.0	7.8	8.8
Cypress	39.3	77.6	82.4	94.3	116.7	61.8	472.1
Cedar	1.1	0.3	2.3	1.6	1.5	--	6.8
Total sftwds.	917.7	1,642.3	1,673.9	1,513.7	1,711.0	314.3	7,772.9
Hardwoods:							
Bl. & tupelo gum	92.0	163.1	246.4	199.0	355.0	86.6	1,142.1
Sweetgum	70.6	101.7	142.3	114.6	251.8	87.8	768.8
Yellow-poplar	24.0	37.8	56.7	58.8	145.0	55.8	378.1
Soft maple	22.0	37.4	35.5	27.2	62.3	8.3	192.7
Other soft hdwds.	15.3	26.9	32.2	29.4	70.8	14.1	188.7
Total	223.9	366.9	513.1	429.0	884.9	252.6	2,670.4
White & swamp chestnut oaks	23.3	43.4	59.4	39.3	82.8	59.0	307.2
Other white oaks	31.5	44.3	48.4	41.5	75.6	60.7	302.0
No. red, swamp red, & shumard oaks	8.3	7.5	14.2	16.3	48.2	38.4	132.9
Other red oaks	73.4	109.2	124.8	114.5	266.0	174.6	862.5
Hickory	19.9	49.9	35.3	48.2	85.7	52.2	291.2
Ash	10.8	17.6	24.9	18.5	40.7	5.6	118.1
Dogwood, persimmon	16.9	8.4	3.3	1.6	3.6	--	33.8
Other hard hdwds.	15.5	23.4	40.1	30.1	59.0	32.9	201.0
Total	199.6	303.7	350.4	310.0	661.6	423.4	2,248.7
Total hdwds.	423.5	670.6	863.5	739.0	1,546.5	676.0	4,919.1
All species	1,341.2	2,312.9	2,537.4	2,252.7	3,257.5	990.3	12,692.0
Percent	10.6	18.2	20.0	17.7	25.7	7.8	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	96.3	127.7	201.1	165.1	212.4	30.6	833.2
Hardwoods[2]	279.6	355.2	409.8	288.2	546.6	318.1	2,197.5
Rotten culls	33.5	61.8	67.6	62.2	200.2	239.7	665.0
Hardwood limbs	--	--	--	178.5	410.9	236.1	825.5
Total other material	409.4	544.7	678.5	694.0	1,370.1	824.5	4,521.2

[1] Excluding bark.

[2] Includes noncommercial species.

Table 13.--Net volume[1] of all timber by species and class of material

(In million cubic feet)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	700.2	162.3	356.2	1,218.7	68.4	3.5
Slash pine	1,395.1	318.1	730.6	2,443.8	66.7	5.9
Loblolly pine	1,195.4	279.7	737.8	2,212.9	423.8	7.6
Pond pine	91.6	20.0	38.8	150.4	18.2	5.2
Shortleaf pine	490.5	111.5	529.1	1,131.1	160.1	0.1
Virginia pine	44.6	10.3	42.3	97.2	59.1	--
Total	3,917.4	901.9	2,434.8	7,254.1	796.3	22.3
White pine	19.4	4.8	6.9	31.1	8.3	--
Hemlock	6.9	1.9	--	8.8	--	--
Cypress	288.7	66.5	116.9	472.1	26.3	60.6
Cedar	4.4	1.0	1.4	6.8	2.3	0.3
Total sftwds.	4,236.8	976.1	2,560.0	7,772.9	833.2	83.2
Hardwoods:						
Bl. & tupelo gum	518.0	122.6	501.5	1,142.1	508.0	218.7
Sweetgum	365.5	88.7	314.6	768.8	243.7	58.9
Yellow-poplar	208.5	51.1	118.5	378.1	116.6	18.1
Soft maple	79.6	18.2	94.9	192.7	233.6	67.7
Other soft hdwds.	92.1	22.2	74.4	188.7	130.3	48.0
Total	1,263.7	302.8	1,103.9	2,670.4	1,232.2	411.4
White & swamp chestnut oaks	145.7	35.4	126.1	307.2	119.0	11.6
Other white oaks	142.8	35.0	124.2	302.0	345.7	31.7
No. red, swamp red, & shumard oaks	82.7	20.2	30.0	132.9	[illegible]	6.0
Other red oaks	449.7	105.4	307.4	862.5	553.0	155.8
Hickory	150.2	35.9	105.1	291.2	[illegible]	9.2
Ash	52.6	12.2	53.3	118.1	[illegible]	14.7
Dogwood, persimmon	4.3	0.9	28.6	33.8	14.5	1.6
Scrub oak[3]	--	--	--	--	[illegible]	--
Other hard hdwds.	94.4	27.6	79.0	201.0	144.5	17.5
Total	1,122.4	272.6	853.7	2,248.7	[illegible]	248.1
Total hdwds.	2,386.1	575.4	1,957.6	4,919.1	[illegible]	659.5
All species	6,622.9	1,551.5	4,517.6	12,692.0	[illegible]	742.7
Percent	52.2	12.2	35.6	100.0	83.6	16.4

[1] Excluding bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class

(In board feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	4,478	2,982	858	364	1,234
Hardwood	215	31	12	13	21
Slash pine					
Softwood	5,513	3,897	1,023	496	2,007
Hardwood	540	110	34	16	69
Loblolly pine					
Softwood	5,028	3,432	633	127	1,187
Hardwood	734	233	78	34	124
Shortleaf pine					
Softwood	3,972	3,351	633	118	938
Hardwood	1,312	305	86	29	123
Pond pine					
Softwood	2,933	2,108	1,275	378	1,017
Hardwood	249	194	--	5	43
Virginia pine					
Softwood	5,426	2,837	544	173	789
Hardwood	544	193	33	21	61
White pine					
Softwood	5,919	--	1,637	--	2,713
Hardwood	1,805	--	331	--	702
Oak-pine					
Softwood	2,754	1,667	491	271	746
Hardwood	2,210	1,596	428	110	602
Upland hdwds.					
Softwood	177	165	82	127	117
Hardwood	3,746	2,560	835	218	1,166
Scrub oak					
Softwood	430	--	--	60	62
Hardwood	--	--	107	27	27
Lowland hdwds.					
Softwood	476	359	217	290	314
Hardwood	4,907	3,224	1,029	354	1,943
Cypress					
Softwood	8,072	3,825	1,534	567	2,429
Hardwood	192	392	64	--	145
All types					
Softwood	1,885	2,778	564	249	964
Hardwood	3,241	805	356	100	576

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[3]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	11.9	0.3	11.5	0.4	5.5	0.3	1.6	0.2	5.5	0.3
Hardwood	0.6	1.5	0.1	0.2	0.1	0.2	(4/)	0.2	0.1	0.2
Slash pine										
Softwood	18.3	0.3	16.4	0.5	8.6	0.4	2.1	0.2	9.6	0.4
Hardwood	2.0	1.7	1.0	0.7	0.3	0.3	0.1	0.2	0.5	0.5
Loblolly pine										
Softwood	13.4	0.7	13.7	1.2	6.0	1.7	0.8	0.9	5.8	1.3
Hardwood	3.4	2.2	1.7	0.9	0.8	0.7	0.1	0.5	0.9	0.7
Shortleaf pine										
Softwood	10.4	0.1	13.8	0.7	5.8	1.1	0.7	0.7	5.5	0.9
Hardwood	6.8	9.4	1.7	1.7	0.8	0.8	0.2	0.5	0.8	1.0
Pond pine										
Softwood	7.7	--	7.1	0.6	6.1	0.5	1.8	0.4	4.1	0.5
Hardwood	0.8	1.1	0.6	0.3	0.1	(4/)	0.1	0.2	0.2	0.2
Virginia pine										
Softwood	13.8	3.6	12.0	1.6	5.9	2.9	0.8	0.8	4.5	1.7
Hardwood	1.6	3.4	1.6	1.8	0.4	1.4	0.1	1.6	0.4	1.6
White pine										
Softwood	23.8	--	--	--	6.6	1.1	--	--	10.9	0.8
Hardwood	4.8	1.1	--	--	1.0	3.5	--	--	2.0	2.9
Oak-pine										
Softwood	7.3	0.1	6.0	0.3	2.6	0.2	1.1	0.3	2.8	0.2
Hardwood	8.3	5.2	7.8	3.8	3.6	2.7	0.7	1.3	3.4	2.5
Upland hdwds.										
Softwood	0.6	(4/)	0.8	(4/)	0.4	(4/)	0.6	0.1	0.5	0.1
Hardwood	12.1	6.1	11.7	4.8	5.6	3.8	0.9	2.7	5.4	3.8
Scrub oak										
Softwood	5.5	--	--	--	--	--	0.3	0.1	0.3	0.1
Hardwood	--	--	--	--	1.1	1.1	0.1	1.5	0.1	1.5
Lowland hdwds.										
Softwood	1.3	0.1	1.2	0.2	0.9	0.1	1.1	0.2	1.1	0.1
Hardwood	16.3	9.0	15.0	7.2	7.7	5.5	1.6	3.0	8.7	5.7
Cypress										
Softwood	18.6	1.5	15.1	1.1	8.1	0.5	2.0	1.0	8.9	0.9
Hardwood	0.6	2.0	2.7	1.8	2.4	2.0	(4/)	0.2	1.5	1.3
All types										
Softwood	5.2	0.2	11.2	0.6	4.3	0.7	1.1	0.4	4.5	0.5
Hardwood	11.0	6.3	4.1	2.1	2.7	2.0	0.5	1.2	2.8	2.1

[1] Sound wood and bark.

[2] Sound trees.

[3] Cull trees.

[4] Less than 0.05 cords per acre.

Table 16.--Number[1] of turpentine pine trees in South Georgia by working status and tree size

(In thousands of trees)

Tree working status	Poles	Sawtimber		All trees
	6-8 inches d.b.h.	10-14 inches d.b.h.	16 inches d.b.h. & larger	
Round trees	286,401	85,167	3,256	374,824
Working trees:				
Front-faced	1,488	24,286	482	26,256
Back-faced	602	17,953	2,380	20,935
Resting trees	1,423	20,330	2,475	24,228
Worked-out trees	691	10,523	1,435	12,649
All classes	290,605	158,259	10,028	458,892

[1] Includes sound cull trees.

Table 17.--Area[1] of turpentine pine types in South Georgia by working status

Crop working status	Area	
	Thousand acres	Percent
Round timber	1,349.2	21.3
Working timber		
Front-faced	789.3	12.5
Back-faced	772.3	12.2
Resting timber	521.3	8.2
Worked-out timber	165.3	2.6
No status[2]	2,737.4	43.2
All classes	6,334.8	100.0

[1] Includes 446 thousand acres of hardwood-longleaf pine and hardwood-slash pine mixtures.

[2] Areas having less than 15 longleaf or slash pine trees 9.0 inches d.b.h. or larger per acre.

Table 18.--Area of stump land and tonnage of wood naval stores stumps in South Georgia by availability class

Availability class	Area	Number of stumps	Tonnage[1]
	Thousand acres	Thousand stumps	Thousand tons
Merchantable area	5,544.8	97,354	16,196
Marginal area[2]	132.7	1,705	287
Potential area[3]	1,596.2	31,381	5,140
Inaccessible area	443.6	8,358	1,400
All classes	7,717.3	138,798	23,023

[1] Includes 540 thousand tons of stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Areas unworkable at present due to density of timber stands.

Table 19.--Number of trees[1] by species group, quality class, and tree size

(In thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	2,445,173	717,275	284,531	22,226	3,469,205
Sound culls	400,166	92,524	45,883	3,467	542,040
Rotten culls	6,591	2,808	879	237	10,515
Total	2,851,930	812,607	331,293	25,930	4,021,760
Other softwoods:					
Sound trees	204,849	41,421	19,041	2,559	267,870
Sound culls	8,318	3,579	1,827	120	13,844
Rotten culls	2,777	1,443	1,332	847	6,399
Total	215,944	46,443	22,200	3,526	288,113
Soft hardwoods:					
Sound trees	1,711,358	263,772	51,931	17,933	2,044,994
Sound culls	667,158	123,624	18,837	6,143	815,762
Rotten culls	76,073	50,683	9,530	6,684	142,970
Total	2,454,589	438,079	80,298	30,760	3,003,726
Hard hardwoods:					
Sound trees	1,645,709	216,891	39,331	19,206	1,921,137
Sound culls[2]	1,878,922	223,186	24,903	10,373	2,137,384
Rotten culls	46,006	16,918	5,239	5,388	73,551
Total	3,570,637	456,995	69,473	34,967	4,132,072
All species	9,093,100	1,754,124	503,264	95,183	11,445,671

[1] All trees 1.0 inch d.b.h. and larger.

[2] Includes scrub oak and noncommercial species.

Table 20.--Area[1] of seedling and sapling stands and unstocked areas by plantability class

(In thousand acres)

Forest type	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
Longleaf pine	822.1	137.8	82.0	1,041.9
Slash pine	992.7	78.8	83.5	1,155.0
Loblolly pine	1,555.0	72.5	204.8	1,832.3
Shortleaf pine	628.7	16.3	43.1	688.1
Pond pine	145.7	11.0	5.1	161.8
Virginia pine	122.9	--	1.0	123.9
Oak-pine	811.7	35.2	79.1	926.0
Upland hdwds.	836.8	57.8	54.8	949.4
Scrub oak	114.2	140.6	274.0	528.8
All types	6,029.8	550.0	827.4	7,407.2
Percent	81.4	7.4	11.2	100.0

[1] Excludes acreage of oak-gum-cypress types, and areas on which planting is impractical because of dense brush cover.

[2] Sufficient seed trees present or area is restocking naturally.

Table 21.--Stocking on commercial forest area by forest type and tree-size class

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Pine types	714.7	2,920.3	2,432.5	1,617.7	6,136.4	13,821.6
Oak-pine	114.2	324.4	291.6	293.4	1,313.5	2,337.1
Upland hdwds.	511.5	426.9	538.2	463.5	1,449.4	3,389.5
Oak-gum-cypress	131.3	521.3	604.4	607.1	2,556.8	4,420.9
All types	1,471.7	4,192.9	3,866.7	2,981.7	11,456.1	23,969.1
Percent	6.2	17.5	16.1	12.4	47.8	100.0

GROWING STOCK 5.0 INCHES D.B.H. AND LARGER

Pine types	4,399.7	5,860.0	2,248.4	889.9	423.6	13,821.6
Oak-pine	790.0	1,103.5	297.8	107.9	37.9	2,337.1
Upland hdwds.	1,297.3	1,489.0	509.5	80.1	13.6	3,389.5
Oak-gum-cypress	1,047.1	1,791.1	997.1	352.2	233.4	4,420.9
All types	7,534.1	10,243.6	4,052.8	1,430.1	708.5	23,969.1
Percent	31.4	42.7	16.9	6.0	3.0	100.0

SAWTIMBER GROWING STOCK

Pine types	7,632.2	4,681.0	1,159.7	286.0	62.7	13,821.6
Oak-pine	1,390.6	790.1	123.9	32.5	--	2,337.1
Upland hdwds.	2,053.7	1,171.6	147.0	17.2	--	3,389.5
Oak-gum-cypress	1,845.8	1,930.0	497.4	92.0	55.7	4,420.9
All types	12,922.3	8,572.7	1,928.0	427.7	118.4	23,969.1
Percent	53.9	35.8	8.0	1.8	0.5	100.0

Table 22.--Net annual growth of sawtimber by survey unit and species group

(In million board feet)

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	936.0	35.3	143.0	60.8	1,175.1
Southwest	371.2	8.6	56.7	20.7	457.2
Central	644.3	5.8	205.5	87.5	943.1
North Central	196.9	0.4	49.1	53.7	300.1
North	139.6	7.4	23.7	104.8	275.5
State	2,288.0	57.5	478.0	327.5	3,151.0

Table 23.--Net annual growth of growing stock by survey unit and species group

(In thousand cords)

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	3,311	110	691	274	4,386
Southwest	1,090	38	273	132	1,533
Central	2,316	16	1,045	523	3,900
North Central	1,025	1	253	248	1,527
North	623	32	104	461	1,220
State	8,365	197	2,366	1,638	12,566

(In million cubic feet)

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	223.1	8.6	47.0	19.0	297.7
Southwest	75.8	2.8	18.9	9.1	106.6
Central	168.2	1.4	75.8	37.5	282.9
North Central	65.2	0.1	17.3	16.9	99.5
North	40.0	2.4	7.1	30.7	80.2
State	572.3	15.3	166.1	113.2	866.9

Table 24.--Average growth of sawtimber per acre by forest type and survey unit

(In board feet)

Forest type	Survey unit					State
	Southeast	Southwest	Central	North Central	North	
Longleaf pine	121	126	138	42	(1/)	123
Slash pine	214	235	93	54	--	216
Loblolly pine	194	253	168	88	110	149
Shortleaf pine	65	193	155	86	90	113
Pond pine	73	181	(1/)	--	--	103
Virginia pine	--	--	--	44	52	52
Cypress	97	101	(1/)	--	--	107
Oak-pine	158	157	107	73	92	115
Oak-hickory	65	39	80	63	84	75
Lowland hdwds.	151	133	173	150	44	155
Scrub oak	5	9	2	11	--	5
All types	159	159	147	88	87	136

1/ Insufficient sample.

Table 25.--Average growth of growing stock per acre by forest type and survey unit

(In standard cords)

Forest type	Survey unit					State
	Southeast	Southwest	Central	North Central	North	
Longleaf pine	0.4	0.3	0.5	0.5	(1/)	0.4
Slash pine	0.7	0.7	0.4	0.4	--	0.7
Loblolly pine	0.9	0.8	0.7	0.6	0.6	0.7
Shortleaf pine	1.2	0.6	0.6	0.6	0.5	0.6
Pond pine	0.3	0.6	(1/)	--	--	0.4
Virginia pine	--	--	--	0.4	0.4	0.4
Cypress	0.3	0.5	(1/)	--	--	0.4
Oak-pine	0.6	0.6	0.5	0.3	0.4	0.5
Oak-hickory	0.3	0.2	0.3	0.3	0.3	0.3
Lowland hdwds.	0.6	0.5	0.8	0.7	0.2	0.7
Scrub oak	(2/)	(2/)	(2/)	(2/)	--	(2/)
All types	0.6	0.5	0.6	0.5	0.4	0.6

1/ Insufficient sample.

2/ Less than 0.05 cords per acre.

Table 26.--Net annual growth percentages[1] for sawtimber volumes by survey unit and species group

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	9.71	[illegible]	5.63	4.30	7.96
Southwest	9.68	3.23	6.14	4.08	8.27
Central	13.30	4.18	7.88	5.39	10.23
North Central	11.53	8.25	6.23	5.15	8.47
North	10.55	4.15	6.26	5.28	[illegible]
State	10.72	3.27	6.61	4.98	8.53

[1] For use with board-foot volumes.

Table 27.--Net annual growth percentages[1] for growing stock volumes by survey unit and species group

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	7.01	2.46	4.92	4.81	6.10
Southwest	6.98	3.33	5.52	[illegible]	[illegible]
Central	9.77	3.33	7.84	6.60	8.58
North Central	8.41	7.35	6.08	4.21	6.80
North	8.16	5.71	5.87	4.27	5.84
State	7.89	2.94	6.22	5.05	6.83

[1] For use with volumes in cubic feet or standard cords.

Table 28.--Average annual timber cut from sawtimber trees by survey unit and species group

(In million board feet)

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	786.6	15.5	95.4	27.5	925.0
Southwest	365.6	8.6	35.4	11.0	420.6
Central	787.0	1.1	171.7	54.7	1,014.5
North Central	324.0	0.3	67.1	27.5	418.9
North	166.3	6.1	27.5	50.8	250.7
State	2,429.5	31.6	397.1	171.5	3,029.7

Table 29.--Average annual timber cut from growing stock by survey unit and species group

(In thousand cords)

Survey unit	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Southeast	2,687	44	302	76	3,109
Southwest	1,138	24	96	35	1,293
Central	2,470	3	498	170	3,141
North Central	1,303	3	203	144	1,653
North	638	16	74	177	905
State	8,236	90	1,173	602	10,101

(In million cubic feet)

Southeast	212.1	4.0	23.4	6.1	245.6
Southwest	86.7	1.8	7.8	2.7	99.0
Central	190.0	0.3	39.4	13.3	243.0
North Central	96.8	0.2	16.0	10.5	123.5
North	47.3	1.3	5.9	13.4	67.9
State	632.9	7.6	92.5	46.0	779.0

Table 30.--Net annual change in sawtimber volume by species group

(In million board feet)

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1	21,351.1	1,760.7	7,235.2	6,573.3	36,920.3
Total growth	2,432.6	65.4	517.4	377.8	3,393.2
Mortality	144.6	7.9	39.4	50.3	242.2
Net growth	2,288.0	57.5	478.0	327.5	3,151.0
Timber cut	2,429.5	31.6	397.1	171.5	3,029.7
Loss or gain	-141.5	+25.9	+80.9	+156.0	+121.3
Net volume, Dec. 31	21,209.6	1,786.6	7,316.1	6,729.3	37,041.6
Percent change	-0.7	+1.5	+1.1	+2.4	+0.3

Table 31.--Net annual change in growing stock by species group

(In thousand cords)

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1	101,122	6,323	36,497	30,543	174,485
Total growth	9,055	218	2,534	1,866	13,673
Mortality	690	21	168	228	1,107
Net growth	8,365	197	2,366	1,638	12,566
Timber cut	8,236	90	1,173	602	10,101
Loss or gain	+129	+107	+1,193	+1,036	+2,465
Net volume, Dec. 31	101,251	6,430	37,690	31,579	176,950
Percent change	+0.1	+1.7	+3.3	+3.4	+1.4
(In million cubic feet)					
Net volume, Jan. 1	7,254.1	518.8	2,670.4	2,248.7	12,692.0
Total growth	621.9	17.2	178.3	130.1	947.5
Mortality	49.6	1.9	12.2	16.9	80.6
Net growth	572.3	15.3	166.1	113.2	866.9
Timber cut	632.9	7.6	92.5	46.0	779.0
Loss or gain	-60.6	+7.7	+73.6	+67.2	+87.9
Net volume, Dec. 31	7,193.5	526.5	2,744.0	2,315.9	12,779.9
Percent change	-0.8	+1.5	+2.8	+3.0	+0.7

Table 32.--County area by broad use class

County	Total area[1/]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Appling	329.6	75.2	1.0	--	253.4	77.1
Atkinson	203.5	35.1	0.8	--	167.6	82.7
Bacon	187.5	57.0	--	--	130.5	69.6
Baker	227.9	110.5	7.2	--	110.2	49.9
Baldwin	169.6	64.0	3.1	--	102.5	61.6
Banks	147.8	55.4	--	--	92.4	62.5
Barrow	109.4	57.3	0.4	--	51.7	47.4
Bartow	304.6	106.0	9.6	--	189.0	64.1
Ben Hill	163.2	59.0	0.2	--	104.0	63.8
Berrien	300.8	88.8	1.0	--	211.0	70.4
Bibb	162.6	66.8	3.0	--	92.8	58.1
Bleckley	140.2	76.4	0.2	--	63.6	45.4
Brantley	286.1	24.1	--	--	262.0	91.6
Brooks	318.1	148.6	2.7	--	166.8	52.9
Bryan	291.2	43.4	11.6	35.2	201.0	71.9
Bulloch	438.4	198.2	2.4	--	237.8	54.5
Burke	532.5	280.8	2.1	--	249.6	47.1
Butts	120.3	50.4	2.3	--	67.6	57.3
Calhoun	185.0	90.7	0.2	--	94.1	50.9
Camden	444.8	103.6	31.7	--	309.5	74.9
Candler	160.6	61.5	0.6	--	98.5	61.6
Carroll	316.8	163.3	0.7	--	152.8	48.3
Catoosa	106.9	40.8	0.2	4.1	61.8	57.9
Charlton	511.4	35.4	6.9	4.0	465.1	92.2
Chatham	321.3	148.3	46.9	0.4	125.7	45.8
Chattahoochee	161.9	31.8	1.3	--	128.8	80.2
Chattooga	202.9	74.6	--	(2/)	128.3	63.2
Cherokee	273.9	73.4	9.9	--	190.6	72.2
Clarke	80.0	45.7	0.2	--	34.1	42.7
Clay	143.4	69.5	0.6	--	73.3	51.3
Clayton	95.4	51.6	0.1	--	43.7	45.9
Clinch	510.1	20.3	0.7	--	489.1	96.0
Cobb	222.7	114.6	1.8	2.2	104.1	47.1
Coffee	392.3	142.2	0.4	--	249.7	63.7
Colquitt	360.3	184.4	0.7	--	175.2	48.7
Columbia	197.1	46.1	11.8	--	139.2	75.1
Cook	149.1	60.8	0.7	--	87.6	59.0
Coweta	283.5	113.6	0.5	--	169.4	59.9
Crawford	201.6	54.8	1.5	--	145.3	72.6
Crisp	190.7	110.7	1.7	--	78.3	41.4
Dade	105.6	18.8	--	3.2	83.6	79.2
Dawson	136.3	23.9	--	0.2	112.2	82.3
Decatur	392.3	136.5	3.8	--	252.0	64.9
De Kalb	172.2	87.7	0.5	--	84.0	48.9
Dodge	320.0	140.3	4.4	--	175.3	55.5
Dooly	252.8	154.2	1.6	--	97.0	38.6
Dougherty	210.6	116.3	8.0	--	86.3	42.6
Douglas	129.3	44.2	1.0	--	84.1	65.5
Early	336.6	185.6	1.3	--	149.7	44.6
Echols	272.0	17.0	0.3	--	254.7	93.7
Effingham	307.2	53.2	1.2	--	252.8	82.6
Elbert	233.6	73.4	15.0	--	145.2	66.4
Emanuel	439.1	154.9	0.9	--	283.3	64.7
Evans	119.0	41.4	0.5	--	77.1	65.1
Fannin	256.0	51.7	3.8	1.8	198.7	78.8

Table 32.--County area by broad use class (continued)

County	Total area1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Fayette	127.4	60.2	0.3	--	66.9	52.6
Floyd	329.0	119.0	2.9	0.1	207.0	63.5
Forsyth	155.5	58.0	0.6	--	96.9	62.6
Franklin	172.2	94.3	0.3	--	77.6	45.1
Fulton	339.8	175.0	2.2	--	162.6	48.2
Gilmer	281.0	28.4	0.2	0.5	251.9	89.7
Glascock	91.5	40.8	0.7	--	50.0	55.1
Glynn	297.6	89.5	32.6	0.1	175.4	66.2
Gordon	229.1	112.6	1.7	0.1	114.7	50.4
Grady	298.9	122.0	0.6	--	176.3	59.1
Greene	258.5	61.1	0.8	--	196.6	76.3
Gwinnett	279.7	136.5	0.2	--	143.0	51.2
Habersham	181.1	49.5	0.7	2.7	128.2	71.1
Hall	272.6	100.4	1.1	--	171.1	63.0
Hancock	310.4	80.4	0.6	--	229.4	74.0
Haralson	182.4	59.1	0.2	--	123.1	67.6
Harris	302.7	49.1	6.6	--	247.0	83.4
Hart	165.1	93.3	1.5	--	70.3	43.0
Heard	193.3	44.5	1.5	3.6	143.7	74.9
Henry	211.8	113.3	0.1	--	98.4	46.5
Houston	243.2	119.3	1.8	--	122.1	50.6
Irwin	238.1	104.8	0.3	--	133.0	55.9
Jackson	215.7	116.1	--	--	99.6	46.2
Jasper	240.0	59.3	1.8	--	178.9	75.1
Jeff Davis	211.8	40.0	1.1	--	170.7	81.0
Jefferson	340.5	172.9	0.1	--	167.5	49.2
Jenkins	224.6	122.5	0.4	0.1	101.6	45.3
Johnson	200.3	101.3	0.8	--	98.2	49.2
Jones	257.3	47.0	0.8	--	209.5	81.7
Lamar	115.8	46.8	--	--	69.0	59.6
Lanier	117.1	18.4	4.0	--	94.7	83.7
Laurens	519.1	243.9	1.6	--	273.6	52.9
Lee	229.1	133.9	6.0	--	89.2	40.0
Liberty	343.0	70.5	25.1	--	247.4	77.8
Lincoln	163.2	36.5	34.4	--	92.3	71.7
Long	257.9	15.4	1.3	2.9	238.3	92.9
Lowndes	327.7	116.4	3.9	--	207.4	64.1
Lumpkin	186.9	20.3	--	2.3	164.3	87.9
McDuffie	168.3	60.9	4.1	--	103.3	62.9
McIntosh	306.6	90.6	41.8	2.6	171.6	64.8
Macon	257.9	118.4	4.6	--	[illegible]	[illegible]
Madison	179.9	90.0	0.3	--	89.6	[illegible]
Marion	233.6	58.2	0.1	--	175.3	75.1
Meriwether	319.4	85.6	0.4	--	[illegible]	73.2
Miller	183.7	96.5	0.9	--	86.3	47.2
Mitchell	327.0	192.6	1.6	--	132.8	40.8
Monroe	255.4	47.8	1.0	--	206.6	81.2
Montgomery	151.7	54.3	2.3	--	[illegible]	[illegible]
Morgan	227.8	97.6	0.1	--	130.1	[illegible]
Murray	218.9	51.2	--	0.5	167.2	76.4
Muscogee	142.1	46.0	3.7	--	92.4	66.8
Newton	174.7	70.8	1.2	--	102.7	59.2
Oconee	119.0	65.0	0.1	--	[illegible]	[illegible]
Oglethorpe	278.4	102.2	0.2	--	176.0	[illegible]
Paulding	203.5	[illegible]	0.1	--	[illegible]	70.6

Table 32.--County area by broad use class (continued)

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Peach	96.6	58.9	0.1	--	37.6	39.0
Pickens	144.0	30.8	0.4	--	112.8	78.6
Pierce	218.9	59.8	0.9	--	158.2	72.6
Pike	147.2	78.9	0.1	--	68.2	46.4
Polk	199.7	88.2	0.1	--	111.4	55.8
Pulaski	162.6	88.2	0.8	--	73.6	45.5
Putnam	224.0	32.9	6.6	--	184.5	84.9
Quitman	109.4	29.3	1.1	--	79.0	72.9
Rabun	240.0	23.7	4.3	3.4	208.6	88.5
Randolph	279.0	132.5	0.3	--	146.2	52.5
Richmond	208.6	83.9	4.2	2.2	118.3	57.9
Rockdale	81.9	38.2	0.2	2.0	41.5	50.8
Schley	103.7	39.3	--	--	64.4	62.1
Screven	416.6	177.6	2.9	--	236.1	57.1
Seminole	177.3	77.8	3.5	--	96.0	55.2
Spalding	128.6	65.3	0.1	--	63.2	49.2
Stephens	115.2	37.3	0.8	1.6	75.5	66.0
Stewart	296.3	87.8	0.6	--	207.9	70.3
Sumter	314.9	174.3	2.5	--	138.1	44.2
Talbot	249.6	36.3	1.0	--	212.3	85.4
Taliaferro	124.8	25.0	--	--	99.8	80.0
Tattnall	315.5	93.1	1.3	--	221.1	70.4
Taylor	257.9	87.5	2.4	--	168.0	65.8
Telfair	281.6	91.2	0.3	--	190.1	67.6
Terrell	210.6	136.8	1.3	--	72.5	34.6
Thomas	347.5	145.8	4.2	--	197.5	57.5
Tift	170.2	89.5	0.2	--	80.5	47.4
Toombs	236.2	91.0	1.2	--	144.0	61.3
Towns	110.1	16.5	3.9	1.3	88.4	83.2
Treutlen	124.2	43.1	0.2	--	80.9	65.2
Troup	286.1	78.5	2.7	--	204.9	72.3
Turner	187.5	87.8	0.2	--	99.5	53.1
Twiggs	233.6	52.8	1.2	--	179.6	77.3
Union	204.2	42.7	4.0	2.2	155.3	77.6
Upson	213.8	57.8	1.9	--	154.1	72.7
Walker	286.7	87.3	--	1.4	198.0	69.1
Walton	211.2	124.0	0.2	--	87.0	41.2
Ware	583.7	73.5	5.3	5.1	499.8	86.4
Warren	181.8	60.5	0.1	--	121.2	66.7
Washington	431.4	156.9	0.9	--	273.6	63.6
Wayne	413.4	50.6	2.0	--	360.8	87.7
Webster	124.8	32.5	--	--	92.3	74.0
Wheeler	195.8	63.1	1.9	--	130.8	67.5
White	155.5	25.7	0.2	1.7	127.9	82.4
Whitfield	179.8	68.4	--	(2/)	111.4	62.0
Wilcox	245.8	116.8	1.6	--	127.4	52.2
Wilkes	302.1	72.9	1.7	--	227.5	75.7
Wilkinson	293.1	61.0	0.5	--	231.6	79.2
Worth	371.2	175.8	1.1	--	194.3	52.5
Total	37,680.6	13,142.7	481.3	87.5	23,969.1	64.4

1/ Gross area from Bureau of the Census.

2/ Less than 50 acres.

Table 33.--Ownership of commercial forest land by county

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Appling	252.4	99.6	--	--	0.9	0.1	1.0	0.4
Atkinson	167.6	100.0	--	--	--	--	--	--
Bacon	130.5	100.0	--	--	--	--	--	--
Baker	110.2	100.0	--	--	--	--	--	--
Baldwin	97.9	95.5	--	--	4.6	--	4.6	4.5
Banks	91.7	99.2	0.4	--	0.3	--	0.7	0.8
Barrow	49.6	95.9	--	--	2.0	0.1	2.1	4.1
Bartow	183.0	96.8	--	6.0	--	(1/)	6.0	3.2
Ben Hill	103.9	99.9	--	--	--	0.1	0.1	0.1
Berrien	208.2	98.7	--	--	2.7	0.1	2.8	1.3
Bibb	92.4	99.6	--	--	--	0.4	0.4	0.4
Bleckley	63.5	99.8	--	--	0.1	(1/)	0.1	0.2
Brantley	257.0	98.1	--	--	5.0	--	5.0	1.9
Brooks	166.7	99.9	--	--	--	0.1	0.1	0.1
Bryan	129.0	64.2	--	72.0	(1/)	--	72.0	35.8
Bulloch	237.4	99.8	--	--	0.1	0.3	0.4	0.2
Burke	249.5	100.0	--	--	0.1	(1/)	0.1	(1/)
Butts	67.0	99.1	--	--	0.6	(1/)	0.6	0.9
Calhoun	94.1	100.0	--	--	--	(1/)	(1/)	(1/)
Camden	309.1	99.9	--	--	0.4	--	0.4	0.1
Candler	98.5	100.0	--	--	--	(1/)	(1/)	(1/)
Carroll	152.7	99.9	--	--	--	0.1	0.1	0.1
Catoosa	60.4	97.7	--	1.4	--	(1/)	1.4	2.3
Charlton	322.3	69.3	--	141.9	--	0.9	142.8	30.7
Chatham	121.7	96.8	--	2.4	0.1	1.5	4.0	3.2
Chattahoochee	92.7	72.0	--	35.7	--	0.4	36.1	28.0
Chattooga	115.9	90.3	12.4	--	--	(1/)	12.4	9.7
Cherokee	175.8	92.2	--	14.7	--	0.1	14.8	7.8
Clarke	32.4	95.0	--	--	1.6	0.1	1.7	5.0
lay	73.3	100.0	--	--	--	--	--	--
Clayton	43.5	99.5	--	--	--	0.2	0.2	0.5
Clinch	474.1	96.9	--	14.9	--	0.1	15.0	3.1
Cobb	100.6	96.6	--	3.3	--	0.2	3.5	3.4
Coffee	249.5	99.9	--	--	0.1	0.1	0.2	0.1
Colquitt	175.1	99.9	--	--	--	0.1	0.1	0.1
Columbia	131.9	94.8	--	7.3	--	(1/)	7.3	[illegible]
Cook	87.5	99.9	--	--	(1/)	0.1	0.1	0.1
Coweta	168.4	99.4	--	--	--	1.0	1.0	0.6
Crawford	145.2	99.9	--	--	--	0.1	0.1	0.1
Crisp	77.3	98.7	--	--	0.9	0.1	1.0	1.3
Dade	82.1	98.2	--	--	1.5	--	1.5	1.8
Dawson	106.9	95.3	5.0	--	0.3	--	5.3	4.7
Decatur	244.3	96.9	--	4.5	1.5	1.7	7.7	3.1
De Kalb	83.4	99.3	--	0.3	--	0.3	0.6	0.7
Dodge	175.3	100.0	--	--	--	--	--	--
Dooly	97.0	100.0	--	--	--	(1/)	(1/)	(1/)
Dougherty	84.4	97.8	--	0.5	1.4	(1/)	1.9	2.2
Douglas	84.0	99.9	--	--	--	0.1	0.1	0.1
Early	148.7	99.3	--	--	1.0	(1/)	1.0	0.7
Echols	254.7	100.0	--	--	--	--	--	--
Effingham	252.7	100.0	--	--	--	0.1	0.1	(1/)
Elbert	140.8	97.0	--	4.3	--	0.1	4.4	3.0
Emanuel	283.1	99.9	--	--	--	0.2	0.2	0.1
Evans	62.3	80.8	--	14.8	--	(1/)	14.8	19.2
Fannin	104.9	52.8	93.4	0.4	--	--	93.8	47.2

Table 33.--Ownership of commercial forest land by county (continued)

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Fayette	66.8	99.9	--	--	--	0.1	0.1	0.1
Floyd	200.1	96.7	6.3	--	0.4	0.2	6.9	3.3
Forsyth	96.3	99.4	--	0.6	--	--	0.6	0.6
Franklin	77.5	99.9	--	--	(1/)	0.1	0.1	0.1
Fulton	160.7	98.8	--	--	0.1	1.8	1.9	1.2
Gilmer	228.9	90.9	22.9	--	--	0.1	23.0	9.1
Glascock	50.0	100.0	--	--	--	--	--	--
Glynn	170.6	97.3	--	2.0	2.8	(1/)	4.8	2.7
Gordon	107.8	94.0	6.8	--	(1/)	0.1	6.9	6.0
Grady	176.2	99.9	--	--	--	0.1	0.1	0.1
Greene	175.1	89.1	--	21.0	0.5	(1/)	21.5	10.9
Gwinnett	142.0	99.3	--	0.9	0.1	--	1.0	0.7
Habersham	89.3	69.7	38.7	--	0.2	(1/)	38.9	30.3
Hall	170.7	99.8	--	0.3	--	0.1	0.4	0.2
Hancock	229.4	100.0	--	--	--	(1/)	(1/)	(1/)
Haralson	123.1	100.0	--	--	--	(1/)	(1/)	(1/)
Harris	241.0	97.6	--	--	5.9	0.1	6.0	2.4
Hart	70.3	100.0	--	--	--	(1/)	(1/)	(1/)
Heard	143.7	100.0	--	--	--	--	--	--
Henry	98.4	100.0	--	--	--	(1/)	(1/)	(1/)
Houston	119.0	97.5	--	3.1	--	(1/)	3.1	2.5
Irwin	133.0	100.0	--	--	--	--	--	--
Jackson	99.1	99.5	--	--	0.5	(1/)	0.5	0.5
Jasper	153.9	86.0	--	25.0	--	(1/)	25.0	14.0
Jeff Davis	170.7	100.0	--	--	--	--	--	--
Jefferson	164.8	98.4	--	2.7	--	--	2.7	1.6
Jenkins	100.8	99.2	--	(1/)	0.8	--	0.8	0.8
Johnson	98.2	100.0	--	--	--	(1/)	(1/)	(1/)
Jones	168.0	80.2	4.6	36.7	--	0.2	41.5	19.8
Lamar	68.9	99.9	--	--	--	0.1	0.1	0.1
Lanier	86.1	90.9	--	8.6	--	--	8.6	9.1
Laurens	273.4	99.9	--	--	--	0.2	0.2	0.1
Lee	88.8	99.6	--	0.1	0.3	--	0.4	0.4
Liberty	139.1	56.2	--	108.3	--	(1/)	108.3	43.8
Lincoln	72.5	78.5	--	19.8	--	--	19.8	21.5
Long	215.3	90.3	--	23.0	--	--	23.0	9.7
Lowndes	206.2	99.4	--	0.9	--	0.3	1.2	0.6
Lumpkin	109.9	66.9	54.1	--	0.3	(1/)	54.4	33.1
McDuffie	89.4	86.5	--	13.9	--	--	13.9	13.5
McIntosh	168.4	98.1	--	2.9	--	0.3	3.2	1.9
Macon	134.7	99.9	--	--	--	0.2	0.2	0.1
Madison	89.6	100.0	--	--	--	(1/)	(1/)	(1/)
Marion	174.9	99.8	--	0.4	--	(1/)	0.4	0.2
Meriwether	229.2	98.2	--	--	2.6	1.6	4.2	1.8
Miller	86.3	100.0	--	--	--	(1/)	(1/)	(1/)
Mitchell	132.7	99.9	--	--	--	0.1	0.1	0.1
Monroe	206.6	100.0	--	--	--	(1/)	(1/)	(1/)
Montgomery	95.1	100.0	--	--	--	--	--	--
Morgan	124.4	95.6	--	0.3	5.3	0.1	5.7	4.4
Murray	130.3	77.9	34.9	--	1.9	0.1	36.9	22.1
Muscogee	15.2	16.5	--	77.2	--	--	77.2	83.5
Newton	102.6	99.9	--	--	--	0.1	0.1	0.1
Oconee	52.8	98.0	--	1.1	--	--	1.1	2.0
Oglethorpe	172.4	98.0	--	3.6	--	(1/)	3.6	2.0
Paulding	143.5	99.9	--	--	--	0.1	0.1	0.1

Table 33.--Ownership of commercial forest land by county (continued)

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Peach	37.5	99.7	--	--	0.1	(1/)	0.1	0.3
Pickens	112.8	100.0	--	--	--	(1/)	(1/)	(1/)
Pierce	158.1	99.9	--	--	--	0.1	0.1	0.1
Pike	68.0	99.7	--	--	--	0.2	0.2	0.3
Polk	111.3	99.9	--	--	--	0.1	0.1	0.1
Pulaski	73.6	100.0	--	--	--	--	--	--
Putnam	140.4	76.1	--	30.2	13.8	0.1	44.1	23.9
Quitman	79.0	100.0	--	--	--	(1/)	(1/)	(1/)
Rabun	69.9	33.5	137.6	--	1.1	--	138.7	66.5
Randolph	146.1	99.9	--	--	--	0.1	0.1	0.1
Richmond	84.8	71.7	--	32.3	1.2	(1/)	33.5	28.3
Rockdale	41.5	100.0	--	--	--	(1/)	(1/)	(1/)
Schley	64.4	100.0	--	--	--	--	--	--
Screven	235.1	99.6	--	--	--	1.0	1.0	0.4
Seminole	92.1	95.9	--	3.9	--	(1/)	3.9	4.1
Spalding	62.9	99.5	--	--	0.2	0.1	0.3	0.5
Stephens	55.5	73.5	19.9	--	(1/)	0.1	20.0	26.5
Stewart	207.8	100.0	--	--	--	0.1	0.1	(1/)
Sumter	137.8	99.8	--	0.1	(1/)	0.2	0.3	0.2
Talbot	212.3	100.0	--	--	--	--	--	--
Taliaferro	98.9	99.1	--	--	0.9	--	0.9	0.9
Tattnall	212.7	96.2	--	5.1	3.3	--	8.4	3.8
Taylor	167.9	99.9	--	--	--	0.1	0.1	0.1
Telfair	190.1	100.0	--	--	(1/)	(1/)	(1/)	(1/)
Terrell	72.4	99.9	--	--	--	0.1	0.1	0.1
Thomas	196.9	99.7	--	--	--	0.6	0.6	0.3
Tift	79.8	99.1	--	--	0.6	0.1	0.7	0.9
Toombs	143.3	99.5	--	--	0.4	0.3	0.7	0.5
Towns	35.3	39.9	52.4	0.7	--	--	53.1	60.1
Treutlen	80.9	100.0	--	--	--	--	--	--
Troup	204.8	100.0	--	--	--	0.1	0.1	(1/)
Turner	99.4	99.9	--	--	--	0.1	0.1	0.1
Twiggs	179.4	99.9	--	--	--	0.2	0.2	0.1
Union	66.3	42.7	86.4	2.5	0.1	--	89.0	57.3
Upson	153.9	99.9	--	--	--	0.2	0.2	0.1
Walker	182.5	92.2	15.1	--	0.2	0.2	15.5	7.8
Walton	86.9	99.9	--	--	0.1	(1/)	0.1	0.1
Ware	315.0	63.0	--	151.3	31.4	2.1	184.8	37.0
Warren	121.1	99.9	--	0.1	--	(1/)	0.1	0.1
Washington	273.5	100.0	--	--	--	0.1	0.1	(1/)
Wayne	359.5	99.6	--	--	--	1.3	1.3	0.4
Webster	92.3	100.0	--	--	--	--	--	--
Wheeler	129.6	99.1	--	--	1.2	(1/)	1.2	0.9
White	88.8	69.4	39.0	--	0.1	--	39.1	30.6
Whitfield	91.9	82.5	11.0	8.3	--	0.2	19.5	17.5
Wilcox	127.4	100.0	--	--	--	(1/)	(1/)	(1/)
Wilkes	222.4	97.8	--	5.1	--	(1/)	5.1	2.2
Wilkinson	231.3	99.9	--	--	(1/)	0.3	0.3	0.1
Worth	194.2	99.9	--	--	--	0.1	0.1	0.1
Total	22,287.1	93.0	640.9	916.4	101.6	23.1	1,682.0	7.0

1/ Less than 50 acres, or 0.05 percent.

Table 34.--Net volume[1] of sawtimber by county and species group

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Other hardwoods	All species
Appling	365.1	28.2	46.0	439.3
Atkinson	280.2	68.8	--	349.0
Bacon	185.2	36.9	1.9	224.0
Baker	177.3	2.5	21.1	200.9
Baldwin	83.6	13.5	16.5	113.6
Banks	45.9	11.1	27.5	84.5
Barrow	42.6	10.2	7.8	60.6
Bartow	78.1	--	39.6	117.7
Ben Hill	244.8	28.5	1.8	275.1
Berrien	269.7	89.5	8.6	367.8
Bibb	71.7	32.8	27.8	132.3
Bleckley	37.7	29.1	27.0	93.8
Brantley	348.6	98.6	19.9	467.1
Brooks	191.2	31.8	51.7	274.7
Bryan	340.8	141.2	30.8	512.8
Bulloch	294.8	101.9	27.7	424.4
Burke	173.4	191.4	54.6	419.4
Butts	67.6	38.0	18.2	123.8
Calhoun	41.2	47.8	26.4	115.4
Camden	415.4	57.4	119.6	592.4
Candler	113.5	15.0	7.1	135.6
Carroll	76.4	14.8	52.2	143.4
Catoosa	20.9	2.4	34.3	57.6
Charlton	799.3	149.2	20.2	968.7
Chatham	200.5	98.2	37.4	336.1
Chattahoochee	254.9	32.0	19.7	306.6
Chattooga	53.3	8.9	30.3	92.5
Cherokee	30.6	26.8	106.2	163.6
Clarke	21.2	17.6	11.4	50.2
Clay	27.7	14.8	20.7	63.2
Clayton	34.7	11.8	12.9	59.4
Clinch	743.6	45.5	--	789.1
Cobb	80.1	14.0	9.3	103.4
Coffee	502.7	81.9	24.9	609.5
Colquitt	200.3	21.8	9.9	232.0
Columbia	94.9	24.3	32.3	151.5
Cook	100.4	39.3	11.2	150.9
Coweta	49.0	30.7	22.7	102.4
Crawford	124.9	30.1	26.2	181.2
Crisp	117.5	24.1	12.6	154.2
Dade	10.3	29.2	72.4	111.9
Dawson	55.2	2.3	50.1	107.6
Decatur	226.1	77.5	61.3	364.9
De Kalb	107.5	5.7	61.3	174.5
Dodge	265.1	25.7	28.0	318.8
Dooly	101.3	63.0	24.7	189.0
Dougherty	95.3	32.5	69.6	197.4
Douglas	17.8	31.4	17.2	66.4
Early	92.8	56.1	53.0	201.9
Echols	515.8	25.9	2.6	544.3
Effingham	248.4	207.2	70.5	526.1
Elbert	28.9	25.5	74.7	129.1
Emanuel	309.8	117.0	15.1	441.9
Evans	123.2	16.9	4.7	144.8
Fannin	27.6	24.5	202.6	254.7

Table 34.--Net volume[1] of sawtimber by county and species group (continued)

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Other hardwoods	All species
Fayette	22.9	31.1	15.1	69.1
Floyd	138.3	19.8	45.7	203.8
Forsyth	21.4	--	6.0	27.4
Franklin	39.2	20.4	37.5	97.1
Fulton	142.8	23.7	87.1	253.6
Gilmer	49.0	61.9	221.4	332.3
Glascock	29.0	20.3	13.3	62.6
Glynn	285.3	74.6	50.0	409.9
Gordon	36.9	2.2	20.3	59.4
Grady	237.3	82.9	48.3	368.5
Greene	133.7	46.3	36.5	216.5
Gwinnett	49.7	47.5	35.2	132.4
Habersham	133.0	16.7	100.7	250.4
Hall	104.4	9.4	47.0	160.8
Hancock	121.9	87.7	20.2	229.8
Haralson	37.5	70.6	38.6	146.7
Harris	199.7	31.4	25.6	256.7
Hart	24.6	9.6	10.6	44.8
Heard	60.1	30.8	15.4	106.3
Henry	58.8	9.4	56.3	124.5
Houston	102.9	141.4	86.1	330.4
Irwin	199.6	32.3	4.7	236.6
Jackson	36.4	10.7	6.2	53.3
Jasper	231.8	61.3	39.9	333.0
Jeff Davis	239.3	17.2	41.1	297.6
Jefferson	77.4	121.1	73.6	272.1
Jenkins	77.5	57.2	49.9	184.6
Johnson	129.4	75.5	40.0	244.9
Jones	296.0	32.0	30.7	358.7
Lamar	48.5	8.9	8.4	65.8
Lanier	173.3	24.6	8.6	206.5
Laurens	202.1	139.5	198.7	540.3
Lee	46.7	25.8	24.3	96.8
Liberty	387.9	105.1	89.1	582.1
Lincoln	38.5	12.7	11.6	62.8
Long	254.9	65.4	94.8	415.1
Lowndes	304.0	78.5	12.5	395.0
Lumpkin	60.5	7.5	98.6	166.6
McDuffie	48.6	59.8	5.7	114.1
McIntosh	142.4	46.0	27.1	215.5
Macon	74.8	150.1	68.3	293.2
Madison	50.1	69.5	52.5	172.1
Marion	58.2	69.6	29.0	156.8
Meriwether	66.1	44.5	146.3	256.9
Miller	68.3	6.4	26.5	101.2
Mitchell	192.1	6.5	20.7	219.3
Monroe	95.8	32.7	32.0	160.5
Montgomery	137.0	26.0	28.2	191.2
Morgan	105.2	78.0	20.4	203.6
Murray	88.2	5.6	78.4	172.2
Muscogee	148.5	22.3	8.7	179.5
Newton	68.2	23.7	58.9	150.8
Oconee	55.2	15.3	8.0	78.5
Oglethorpe	116.1	49.5	24.1	189.7
Paulding	50.3	23.0	25.9	99.2

Table 34.--Net volume[1] of sawtimber by county and species group (continued)

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Other hardwoods	All species
Peach	36.4	19.2	10.9	66.5
Pickens	49.5	17.7	28.6	95.8
Pierce	229.9	50.6	1.5	282.0
Pike	31.3	22.0	5.3	58.6
Polk	26.2	2.9	23.1	52.2
Pulaski	75.6	36.3	21.4	133.3
Putnam	230.5	35.1	22.2	287.8
Quitman	39.4	13.0	13.2	65.6
Rabun	322.0	61.2	213.4	596.6
Randolph	49.7	93.3	22.3	165.3
Richmond	69.7	66.7	26.8	163.2
Rockdale	6.9	14.5	2.3	23.7
Schley	20.9	28.1	11.8	60.8
Screven	196.0	132.0	82.2	410.2
Seminole	86.0	28.8	19.1	133.9
Spalding	30.1	25.5	16.0	71.6
Stephens	60.8	3.9	53.5	118.2
Stewart	246.1	58.5	59.4	364.0
Sumter	43.9	119.4	39.0	202.3
Talbot	97.5	17.8	7.4	122.7
Taliaferro	49.5	23.1	5.7	78.3
Tattnall	299.3	74.0	37.6	410.9
Taylor	53.3	55.4	28.0	136.7
Telfair	294.0	54.4	60.9	409.3
Terrell	40.9	62.2	16.4	119.5
Thomas	391.1	54.5	60.4	506.0
Tift	136.2	25.6	9.1	170.9
Toombs	223.8	68.4	34.8	327.0
Towns	14.3	20.6	148.2	183.1
Treutlen	189.1	19.4	9.2	217.7
Troup	91.3	57.0	17.0	165.3
Turner	152.6	41.9	1.8	196.3
Twiggs	196.5	56.0	49.9	302.4
Union	88.7	25.8	248.9	363.4
Upson	90.7	17.2	54.3	162.2
Walker	79.1	20.4	86.6	186.1
Walton	50.2	26.5	16.8	93.5
Ware	754.9	65.2	--	820.1
Warren	58.9	40.6	17.1	116.6
Washington	162.0	110.0	76.2	348.2
Wayne	511.6	86.9	54.7	653.2
Webster	35.3	38.8	27.4	101.5
Wheeler	205.5	67.0	56.6	329.1
White	47.6	15.0	80.9	143.5
Whitfield	57.0	6.2	25.2	88.4
Wilcox	162.7	56.0	29.6	248.3
Wilkes	253.5	35.6	46.2	335.3
Wilkinson	174.0	170.2	190.4	534.6
Worth	276.1	50.5	9.9	336.5
Total	23,111.8	7,235.2	6,573.3	36,920.3

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, hemlock, and cedar.

[3] Includes other soft-textured hardwoods.

Table 35.--Net volume[1] of sawtimber by county, species group, and diameter-class group

County	Softwoods		Hardwoods		Softwoods	Hardwoods
	9-14 inches	15+ inches	11-14 inches	15+ inches		
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Appling	319.4	45.7	18.1	56.1	83.1	16.9
Atkinson	232.3	47.9	30.9	37.9	80.3	19.7
Bacon	160.9	24.3	24.1	14.7	82.7	17.3
Baker	93.8	83.5	11.3	12.3	88.3	11.7
Baldwin	70.2	13.4	16.6	13.4	73.6	26.4
Banks	43.6	2.3	19.7	18.9	54.3	45.7
Barrow	26.5	16.1	8.0	10.0	70.3	29.7
Bartow	69.8	8.3	27.5	12.1	66.4	33.6
Ben Hill	179.2	65.6	18.0	12.3	89.0	11.0
Berrien	231.4	38.3	76.7	21.4	73.3	26.7
Bibb	50.2	21.5	26.8	33.8	54.2	45.8
Bleckley	27.9	9.8	22.3	33.8	40.2	59.8
Brantley	274.5	74.1	44.9	73.6	74.6	25.4
Brooks	168.3	22.9	31.5	52.0	69.6	30.4
Bryan	208.2	132.6	82.9	89.1	66.5	33.5
Bulloch	221.9	72.9	72.8	56.8	69.5	30.5
Burke	117.8	55.6	119.7	126.3	41.3	58.7
Butts	58.0	9.6	17.9	38.3	54.6	45.4
Calhoun	31.1	10.1	32.3	41.9	35.7	64.3
Camden	304.7	110.7	67.0	110.0	70.1	29.9
Candler	99.1	14.4	16.7	5.4	83.7	16.3
Carroll	63.7	12.7	35.4	31.6	53.3	46.7
Catoosa	18.0	2.9	21.7	15.0	36.3	63.7
Charlton	511.1	288.2	87.8	81.6	82.5	17.5
Chatham	70.3	130.2	51.2	84.4	59.7	40.3
Chattahoochee	144.1	110.8	30.0	21.7	83.1	16.9
Chattooga	50.0	3.3	19.2	20.0	57.6	42.4
Cherokee	18.0	12.6	78.9	54.1	18.7	81.3
Clarke	18.8	2.4	8.4	20.6	42.2	57.8
Clay	26.7	1.0	19.0	16.5	43.8	56.2
Clayton	25.5	9.2	10.0	14.7	58.4	41.6
Clinch	625.7	117.9	21.4	24.1	94.2	5.8
Cobb	60.2	19.9	11.6	11.7	77.5	22.5
Coffee	399.0	103.7	76.3	30.5	82.5	17.5
Colquitt	170.0	30.3	14.9	16.8	86.3	13.7
Columbia	75.6	19.3	20.8	35.8	62.6	37.4
Cook	77.5	22.9	23.5	27.0	66.5	33.5
Coweta	45.4	3.6	16.6	36.8	47.9	52.1
Crawford	103.5	21.4	28.7	27.6	68.9	31.1
Crisp	76.9	40.6	20.8	15.9	76.2	23.8
Dade	7.9	2.4	48.4	53.2	9.2	90.8
Dawson	35.8	19.4	40.7	11.7	51.3	48.7
Decatur	136.4	89.7	55.4	83.4	62.0	38.0
De Kalb	76.3	31.2	24.8	42.2	61.6	38.4
Dodge	224.7	40.4	17.4	36.3	83.2	16.8
Dooly	73.8	27.5	36.7	51.0	53.6	46.4
Dougherty	69.9	25.4	29.6	72.5	48.3	51.7
Douglas	17.8	--	28.9	19.7	26.8	73.2
Early	83.6	9.2	52.5	56.6	46.0	54.0
Echols	469.0	46.8	24.7	3.8	94.8	5.2
Effingham	188.1	60.3	66.9	210.8	47.2	52.8
Elbert	25.9	3.0	29.7	70.5	22.4	77.6
Emanuel	243.4	66.4	61.2	70.9	70.1	29.9
Evans	99.8	23.4	10.1	11.5	85.1	14.9
Fannin	27.6	--	78.8	148.3	10.8	89.2

Table 35.--Net volume[1] of sawtimber by county, species group, and diameter-class group (continued)

County	Softwoods 9-14 inches	Softwoods 15+ inches	Hardwoods 11-14 inches	Hardwoods 15+ inches	Softwoods	Hardwoods
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Fayette	16.9	6.0	24.2	22.0	33.1	66.9
Floyd	74.2	64.1	17.1	48.4	67.9	32.1
Forsyth	21.4	--	4.5	1.5	78.1	21.9
Franklin	37.2	2.0	29.9	28.0	40.4	59.6
Fulton	104.4	38.4	49.5	61.3	56.3	43.7
Gilmer	49.0	--	114.5	168.8	14.7	85.3
Glascock	19.3	9.7	17.3	16.3	46.3	53.7
Glynn	165.8	119.5	71.3	53.3	69.6	30.4
Gordon	33.5	3.4	16.2	6.3	62.1	37.9
Grady	92.8	144.5	64.8	66.4	64.4	35.6
Greene	133.7	--	44.7	38.1	61.8	38.2
Gwinnett	38.9	10.8	32.2	50.5	37.5	62.5
Habersham	116.2	16.8	60.8	56.6	53.1	46.9
Hall	96.8	7.6	28.3	28.1	64.9	35.1
Hancock	119.4	2.5	69.9	38.0	53.0	47.0
Haralson	37.5	--	51.1	58.1	25.6	74.4
Harris	170.4	29.3	34.3	22.7	77.8	22.2
Hart	24.6	--	6.0	14.2	54.9	45.1
Heard	49.2	10.9	31.0	15.2	56.5	43.5
Henry	55.8	3.0	19.2	46.5	47.2	52.8
Houston	62.5	40.4	77.6	149.9	31.1	68.9
Irwin	157.5	42.1	14.3	22.7	84.4	15.6
Jackson	34.1	2.3	10.4	6.5	68.3	31.7
Jasper	198.0	33.8	39.9	61.3	69.6	30.4
Jeff Davis	214.3	25.0	18.0	40.3	80.4	19.6
Jefferson	72.0	5.4	98.9	95.8	28.4	71.6
Jenkins	53.0	24.5	38.1	69.0	42.0	58.0
Johnson	91.9	37.5	58.0	57.5	52.8	47.2
Jones	228.3	67.7	34.1	28.6	82.5	17.5
Lamar	43.4	5.1	10.5	6.8	73.7	26.3
Lanier	158.7	14.6	20.0	13.2	83.9	16.1
Laurens	168.2	33.9	140.1	198.1	37.4	62.6
Lee	39.2	7.5	25.5	24.6	48.2	51.8
Liberty	258.2	129.7	78.0	116.2	66.6	33.4
Lincoln	30.5	8.0	12.3	12.0	61.3	38.7
Long	217.6	37.3	64.3	95.9	61.4	38.6
Lowndes	217.4	86.6	45.1	45.9	77.0	23.0
Lumpkin	35.2	25.3	67.4	38.7	36.3	63.7
McDuffie	41.7	6.9	30.7	34.8	42.6	57.4
McIntosh	115.1	27.3	32.6	40.5	66.1	33.9
Macon	40.5	34.3	92.5	125.9	25.5	74.5
Madison	40.9	9.2	51.0	71.0	29.1	70.9
Marion	56.4	1.8	49.1	49.5	37.1	62.9
Meriwether	48.1	18.0	78.6	112.2	25.7	74.3
Miller	60.4	7.9	14.2	18.7	67.5	32.5
Mitchell	147.0	45.1	14.1	13.1	87.6	12.4
Monroe	89.0	6.8	27.8	36.9	59.7	40.3
Montgomery	110.8	26.2	19.5	34.7	71.7	28.3
Morgan	99.6	5.6	32.7	65.7	51.7	48.3
Murray	61.9	26.3	36.9	47.1	51.2	48.8
Muscogee	78.0	70.5	15.0	16.0	82.7	17.3
Newton	59.0	9.2	22.3	60.3	45.2	54.8
Oconee	41.2	14.0	9.1	14.2	70.3	29.7
Oglethorpe	101.0	15.1	33.1	40.5	61.2	38.8
Paulding	46.3	4.0	33.5	15.4	50.7	49.3

Table 35.--Net volume[1] of sawtimber by county, species group, and diameter-class group (continued)

County	Softwoods 9-14 inches	Softwoods 15+ inches	Hardwoods 11-14 inches	Hardwoods 15+ inches	Softwoods	Hardwoods
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Peach	27.7	8.7	13.8	16.3	54.7	45.3
Pickens	36.7	12.8	27.6	18.7	51.7	48.3
Pierce	207.8	22.1	31.8	20.3	81.5	18.5
Pike	27.2	4.1	20.0	7.3	53.4	46.6
Polk	26.2	--	18.6	7.4	50.2	49.8
Pulaski	48.7	26.9	26.3	31.4	56.7	43.3
Putnam	185.8	44.7	40.2	17.1	80.1	19.9
Quitman	35.9	3.5	15.0	11.2	60.1	39.9
Rabun	182.9	139.1	95.5	179.[illegible]	54.0	46.0
Randolph	49.7	--	72.9	42.7	[illegible]	69.9
Richmond	55.9	13.8	39.9	53.6	42.7	57.3
Rockdale	6.9	--	5.6	11.2	29.1	70.9
Schley	20.0	0.9	13.7	26.2	34.4	65.6
Screven	142.3	53.7	63.0	151.[illegible]	47.8	52.2
Seminole	60.9	25.1	26.7	21.2	64.2	35.8
Spalding	25.7	4.4	17.5	24.0	42.0	58.0
Stephens	49.3	11.5	33.[illegible]	24.1	51.4	48.6
Stewart	208.2	37.9	56.1	61.8	67.6	32.4
Sumter	31.1	12.8	58.5	99.9	21.7	78.3
Talbot	89.7	7.8	20.8	4.4	79.5	20.5
Taliaferro	41.5	8.0	14.8	14.0	63.2	36.8
Tattnall	257.4	41.9	47.0	64.6	72.8	27.2
Taylor	48.4	4.9	45.1	38.3	39.0	61.0
Telfair	236.1	57.9	65.[illegible]	[illegible].4	71.8	28.2
Terrell	27.1	13.8	39.0	39.6	34.2	65.8
Thomas	200.1	191.0	44.4	70.5	77.3	22.7
Tift	109.2	27.0	16.0	18.7	79.7	20.3
Toombs	184.2	[illegible].6	48.4	[illegible]4.8	68.4	31.6
Towns	14.3	--	48.7	120.1	7.8	92.2
Treutlen	166.9	22.2	14.9	13.7	86.9	13.1
Troup	83.6	7.[illegible]	[illegible]0.4	4[illegible].6	55.2	44.8
Turner	120.6	32.0	17.[illegible]	26.4	77.7	22.3
Twiggs	153.0	43.5	61.1	44.8	65.0	35.0
Union	62.7	26.0	135.6	[illegible]	24.4	75.6
Upson	72.0	18.7	26.5	45.0	55.9	44.1
Walker	64.5	14.6	68.0	39.0	42.5	57.5
Walton	42.0	8.2	17.5	25.8	53.7	46.3
Ware	600.2	154.7	24.7	30.5	92.0	8.0
Warren	49.6	9.3	28.1	29.6	50.5	49.5
Washington	132.8	29.2	93.9	92.[illegible]	46.5	53.5
Wayne	399.2	112.4	55.1	88.5	78.3	21.7
Webster	28.9	6.4	38.1	28.1	34.8	65.2
Wheeler	164.7	40.8	38.0	85.6	62.4	37.6
White	44.3	[illegible]	45.0	50.9	33.2	66.8
Whitfield	47.6	[illegible].4	28.8	2.6	64.5	[illegible]
Wilcox	108.5	54.2	21.4	64.2	65.5	[illegible]
Wilkes	221.0	32.5	50.0	31.8	75.6	24.4
Wilkinson	127.1	46.9	152.5	206.1	[illegible]	[illegible]
Worth	226.6	44.5	28.3	32.1	82.1	[illegible]
Total	17,875.[illegible]	5,236.4	6,269.0	[illegible]	62.6	[illegible]

1/ Log scale, International 1/4-inch rule.

Table 36.--Net volume[1] of growing stock by county, pulping species group, and tree-diameter group

(In thousand cords)

County	Yellow pines		Other sftwds.		Soft hdwds.		Hard hdwds.		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Appling	1,519	269	95	28	98	59	3	106	2,177
Atkinson	865	293	63	11	207	142	4	--	1,585
Bacon	764	132	23	4	135	62	8	5	1,133
Baker	222	208	20	52	4	3	16	44	569
Baldwin	303	97	--	--	89	22	59	32	602
Banks	357	35	--	--	110	19	87	49	657
Barrow	143	60	--	--	22	17	42	13	297
Bartow	345	66	--	--	--	--	100	77	588
Ben Hill	620	300	--	--	28	57	14	2	1,021
Berrien	1,211	211	108	12	161	140	17	17	1,877
Bibb	263	102	--	--	93	60	86	64	668
Bleckley	93	32	--	2	158	61	41	61	448
Brantley	933	279	143	77	349	202	21	46	2,050
Brooks	697	114	113	5	381	60	135	116	1,621
Bryan	821	448	12	--	409	268	66	69	2,093
Bulloch	697	375	41	--	381	174	68	63	1,799
Burke	271	234	28	42	561	404	102	124	1,766
Butts	318	63	--	--	90	89	67	35	662
Calhoun	91	44	11	7	174	89	68	56	540
Camden	1,383	481	77	16	413	115	217	248	2,950
Candler	333	126	--	--	152	17	9	13	650
Carroll	383	53	--	--	83	33	149	108	809
Catoosa	75	18	2	3	5	5	81	53	242
Charlton	1,981	315	304	612	447	289	30	29	4,007
Chatham	239	342	8	11	390	206	86	84	1,366
Chattahoochee	376	407	--	--	164	55	48	47	1,097
Chattooga	279	53	--	--	27	21	156	60	596
Cherokee	206	39	--	--	20	70	456	171	962
Clarke	113	16	--	--	44	34	26	26	259
Clay	141	11	--	--	61	27	47	47	334
Clayton	141	40	--	--	78	22	31	28	340
Clinch	2,589	587	601	71	232	88	--	--	4,168
Cobb	281	92	--	--	7	31	51	17	479
Coffee	1,535	553	120	34	333	132	19	51	2,777
Colquitt	608	177	2	--	82	43	21	24	957
Columbia	516	106	--	--	60	49	113	81	925
Cook	231	112	16	6	85	83	21	24	578
Coweta	376	29	--	--	67	75	55	51	653
Crawford	429	109	--	--	100	53	36	60	787
Crisp	240	147	7	15	58	51	32	21	571
Dade	58	6	14	--	27	63	266	141	575
Dawson	151	83	--	--	--	6	88	71	399
Decatur	566	285	10	6	256	143	269	121	1,656
De Kalb	290	141	--	--	19	12	110	136	708
Dodge	924	260	11	16	121	52	63	66	1,513
Dooly	193	113	29	10	96	121	28	50	640
Dougherty	169	90	93	29	47	71	77	152	728
Douglas	190	--	--	--	69	59	138	39	495
Early	269	33	68	20	272	102	103	111	978
Echols	1,703	321	301	32	148	29	3	4	2,541
Effingham	689	227	80	41	192	453	230	141	2,053
Elbert	361	14	4	3	96	54	135	172	839
Emanuel	1,071	371	--	--	267	234	58	33	2,034
Evans	430	110	46	4	132	27	9	11	769
Fannin	121	15	8	7	92	56	492	387	1,178

Table 36.--Net volume[1/] of growing stock by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

County	Yellow pines		Other sftwds.		Soft hdwds.		Hard hdwds.		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Fayette	110	26	--	--	95	60	61	37	389
Floyd	411	183	--	--	14	41	43	104	796
Forsyth	139	4	--	--	--	--	28	10	181
Franklin	190	24	1	--	8	48	121	83	475
Fulton	446	215	--	--	88	47	248	177	1,221
Gilmer	324	7	45	8	78	131	914	379	1,886
Glascock	99	40	--	--	79	39	58	27	342
Glynn	441	351	68	79	244	141	175	107	1,606
Gordon	224	26	--	--	79	--	41	36	406
Grady	233	434	--	--	382	118	165	95	1,427
Greene	672	55	--	--	160	88	90	65	1,130
Gwinnett	212	47	--	--	20	121	47	84	531
Habersham	334	146	--	--	49	31	365	187	1,112
Hall	479	60	--	--	41	23	256	105	964
Hancock	681	51	--	--	240	176	151	35	1,334
Haralson	268	12	--	--	143	153	163	71	810
Harris	899	158	--	4	209	53	85	48	1,456
Hart	169	15	--	--	72	20	98	25	399
Heard	318	64	--	--	85	49	135	27	678
Henry	361	27	--	--	15	18	115	121	657
Houston	219	145	15	23	301	297	100	196	1,296
Irwin	494	243	28	3	121	76	--	11	976
Jackson	210	22	4	--	24	22	6	13	301
Jasper	863	234	4	--	254	129	148	83	1,715
Jeff Davis	759	243	20	--	165	29	8	96	1,320
Jefferson	251	51	21	16	424	200	125	163	1,251
Jenkins	211	79	8	28	78	127	104	110	745
Johnson	287	170	2	--	100	150	40	83	832
Jones	973	361	--	--	103	46	24	78	1,585
Lamar	271	46	--	--	71	15	43	17	463
Lanier	601	120	74	9	183	39	4	18	1,048
Laurens	814	187	7	11	361	279	136	445	2,240
Lee	168	57	4	2	69	57	56	64	477
Liberty	949	540	23	39	196	219	215	178	2,359
Lincoln	323	26	--	--	31	26	33	18	457
Long	996	239	87	41	170	130	131	211	2,005
Lowndes	615	300	128	30	109	153	50	28	1,413
Lumpkin	334	9	30	61	33	10	393	167	1,037
McDuffie	362	33	--	--	155	126	31	8	715
McIntosh	276	119	73	53	261	82	59	44	967
Macon	241	119	--	--	221	311	99	152	1,143
Madison	244	35	--	--	137	124	101	125	766
Marion	352	23	--	--	207	122	59	73	836
Meriwether	524	65	--	--	202	74	301	301	1,467
Miller	304	52	17	3	18	7	47	[illegible]	[illegible]
Mitchell	346	250	--	--	90	9	44	34	773
Monroe	758	53	--	--	159	68	94	76	1,208
Montgomery	445	157	2	3	160	47	10	59	883
Morgan	550	63	--	--	195	162	[illegible]	[illegible]	[illegible]
Murray	524	38	13	33	6	10	325	129	1,078
Muscogee	256	234	--	--	134	39	56	20	739
Newton	278	49	--	--	42	53	99	143	664
Oconee	230	57	5	--	25	31	55	18	421
Oglethorpe	839	64	--	--	125	[illegible]	74	[illegible]	1,250
Paulding	357	15	--	--	137	39	[illegible]	30	[illegible]

Table 36.--Net volume[1] of growing stock by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

County	Yellow pines		Other sftwds.		Soft hdwds.		Hard hdwds.		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Peach	117	44	--	--	77	35	33	27	333
Pickens	265	55	--	--	26	25	50	52	473
Pierce	918	180	53	12	155	92	4	--	1,414
Pike	171	25	2	--	49	42	12	8	309
Polk	280	10	--	--	3	5	174	40	512
Pulaski	117	103	3	18	70	73	34	43	461
Putnam	888	241	--	--	110	56	78	43	1,416
Quitman	173	31	--	--	73	18	56	26	377
Rabun	540	322	76	105	80	115	622	428	2,288
Randolph	233	24	--	--	346	191	45	50	889
Richmond	194	75	9	15	172	144	69	65	743
Rockdale	78	4	1	--	27	31	20	3	164
Schley	231	12	--	2	95	64	30	22	456
Screven	467	230	36	24	232	288	152	168	1,597
Seminole	200	110	14	15	39	55	33	33	499
Spalding	198	20	--	--	71	52	23	35	399
Stephens	252	45	4	--	20	8	149	94	572
Stewart	805	259	--	--	232	108	141	119	1,664
Sumter	173	47	--	5	202	276	99	75	877
Talbot	550	68	--	--	55	35	107	10	825
Taliaferro	408	34	--	--	88	38	49	8	625
Tattnall	946	264	14	10	324	150	44	74	1,826
Taylor	357	30	--	--	200	103	94	52	836
Telfair	1,158	295	7	--	244	99	105	113	2,021
Terrell	57	45	34	12	296	115	31	43	633
Thomas	556	657	1	4	294	96	120	136	1,864
Tift	370	143	43	16	94	44	14	19	743
Toombs	683	277	15	--	287	139	12	86	1,499
Towns	73	-	--	--	38	48	274	299	732
Treutlen	722	198	--	--	81	38	14	20	1,073
Troup	1,022	31	2	--	206	123	115	38	1,537
Turner	423	156	70	17	103	84	8	1	862
Twiggs	511	191	--	--	132	114	217	95	1,260
Union	222	44	14	54	77	53	358	496	1,318
Upson	372	96	--	--	93	23	74	128	786
Walker	405	62	11	--	79	35	571	120	1,283
Walton	277	49	--	--	83	56	50	42	557
Ware	2,528	534	135	251	195	143	--	--	3,786
Warren	261	37	--	--	122	74	81	40	615
Washington	540	169	3	--	232	199	206	168	1,517
Wayne	2,033	459	230	50	257	168	27	120	3,344
Webster	134	30	--	--	142	69	63	56	494
Wheeler	628	236	--	4	219	144	117	123	1,471
White	221	56	11	--	41	35	240	166	770
Whitfield	320	31	--	--	62	12	224	31	680
Wilcox	314	210	30	16	93	118	19	64	864
Wilkes	1,548	181	--	--	263	57	230	99	2,378
Wilkinson	467	167	68	18	418	336	323	435	2,232
Worth	677	358	28	2	47	95	36	17	1,260
Total	78,490	22,632	4,051	2,272	22,304	14,193	17,095	13,448	174,485

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[1] Sound wood and bark.

Table 37.--Net volume[1] of cull trees by county, pulping species group, and tree-diameter group

(In thousand cords)

County	Yellow pines		Other sftwds.		Soft hdwds.		Hard hdwds.		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Appling	42	42	2	--	95	138	76	41	436
Atkinson	18	17	5	--	121	137	36	9	343
Bacon	36	12	2	3	109	82	43	1	288
Baker	9	6	1	--	21	21	165	217	440
Baldwin	40	24	--	--	13	12	28	14	131
Banks	55	13	--	--	16	9	43	21	157
Barrow	43	12	--	--	35	16	36	16	158
Bartow	183	8	--	--	12	--	318	80	601
Ben Hill	13	--	1	--	39	46	24	9	132
Berrien	9	--	8	8	171	38	27	9	270
Bibb	20	4	--	--	40	40	34	27	165
Bleckley	17	6	1	--	84	43	49	62	262
Brantley	51	39	14	12	165	128	53	44	506
Brooks	4	2	1	6	76	50	48	94	281
Bryan	33	79	1	--	145	262	67	91	678
Bulloch	13	17	3	9	154	144	36	110	486
Burke	47	80	--	--	198	305	99	171	900
Butts	24	5	--	--	6	25	7	10	77
Calhoun	3	2	--	--	75	76	35	126	317
Camden	43	47	68	8	131	130	224	346	997
Candler	20	13	--	--	68	68	29	17	215
Carroll	69	24	--	--	52	37	190	65	437
Catoosa	11	2	--	--	2	3	29	43	90
Charlton	26	13	60	132	422	212	4	16	885
Chatham	22	19	7	11	100	128	111	209	607
Chattahoochee	81	98	--	--	69	33	31	18	330
Chattooga	65	63	--	--	52	32	356	184	752
Cherokee	57	--	--	--	6	34	58	62	217
Clarke	34	4	--	--	9	17	14	10	88
Clay	18	9	--	2	19	20	54	65	187
Clayton	60	23	--	--	14	24	34	22	177
Clinch	62	34	30	12	314	77	13	14	556
Cobb	39	20	--	--	23	36	68	22	208
Coffee	67	27	3	--	135	113	32	28	405
Colquitt	11	--	--	--	130	69	9	11	230
Columbia	110	27	--	--	34	28	78	28	305
Cook	9	6	3	--	108	61	30	23	240
Coweta	167	59	--	--	72	75	68	35	476
Crawford	42	25	--	--	39	58	65	57	286
Crisp	4	10	--	--	76	59	22	24	195
Dade	11	--	--	--	63	32	139	149	394
Dawson	55	32	--	17	52	9	281	137	583
Decatur	41	14	--	--	42	127	125	121	470
De Kalb	109	36	--	--	34	11	88	93	371
Dodge	38	21	--	--	124	94	94	108	479
Dooly	16	13	1	5	59	49	38	35	216
Dougherty	25	20	8	--	24	48	44	155	324
Douglas	40	3	--	--	71	42	155	50	361
Early	6	--	5	--	108	70	112	201	502
Echols	24	--	67	4	66	60	15	5	241
Effingham	30	2	5	21	51	277	105	151	642
Elbert	149	--	--	--	5	30	34	59	277
Emanuel	20	5	--	--	138	182	81	37	463
Evans	15	14	5	2	69	32	26	14	177
Fannin	18	12	4	--	68	49	277	285	713

Table 37.--Net volume[1] of cull trees by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

County	Yellow pines		Other sftwds.		Soft hdwds.		Hard hdwds.		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Fayette	14	2	--	--	52	67	34	26	195
Floyd	160	32	--	--	27	45	266	238	768
Forsyth	131	25	--	--	--	--	100	66	322
Franklin	9	13	--	--	22	16	53	56	169
Fulton	149	10	--	--	126	124	131	196	736
Gilmer	29	7	11	18	65	74	554	415	1,173
Glascock	4	3	--	--	33	21	49	22	132
Glynn	24	33	4	--	70	95	153	357	736
Gordon	132	16	--	--	56	10	189	66	469
Grady	35	14	--	--	148	127	48	157	529
Greene	123	4	--	--	68	82	89	59	425
Gwinnett	320	54	--	--	70	164	59	46	713
Habersham	10	4	--	--	23	20	243	114	414
Hall	86	25	--	--	9	5	102	73	300
Hancock	82	9	--	--	55	69	54	38	307
Haralson	31	5	--	--	63	68	151	46	364
Harris	199	68	--	--	115	96	204	125	807
Hart	4	--	--	--	13	4	18	22	61
Heard	68	11	--	--	44	27	56	130	336
Henry	47	8	--	--	24	15	23	60	177
Houston	11	6	--	--	154	141	47	104	463
Irwin	13	13	9	13	115	38	15	10	226
Jackson	118	37	--	--	42	23	23	31	274
Jasper	87	54	--	1	22	39	84	42	329
Jeff Davis	56	33	4	--	91	24	93	28	329
Jefferson	51	30	8	--	138	194	149	146	716
Jenkins	3	3	6	11	58	109	30	54	274
Johnson	26	11	--	--	121	139	39	34	370
Jones	119	68	--	--	62	34	30	59	372
Lamar	58	23	--	--	36	17	27	16	177
Lanier	10	15	4	2	90	22	21	10	174
Laurens	37	72	2	--	256	224	93	202	886
Lee	11	4	1	2	47	127	59	92	343
Liberty	29	10	9	36	149	223	58	198	712
Lincoln	35	9	--	--	8	22	85	23	182
Long	30	9	1	--	63	64	54	157	378
Lowndes	2	--	11	--	106	142	86	130	477
Lumpkin	66	28	--	--	83	2	151	161	491
McDuffie	54	13	--	--	49	62	10	21	209
McIntosh	8	19	14	25	116	148	90	195	615
Macon	29	22	--	--	45	98	34	68	296
Madison	45	6	--	--	80	85	44	40	300
Marion	56	14	--	--	89	100	176	65	500
Meriwether	110	48	--	--	63	34	164	118	537
Miller	16	--	1	--	19	30	54	187	307
Mitchell	4	--	--	--	8	23	11	105	151
Monroe	131	43	--	--	36	64	59	37	370
Montgomery	30	25	--	--	44	70	38	78	285
Morgan	47	13	--	--	80	78	42	33	293
Murray	115	23	--	--	68	18	244	170	638
Muscogee	20	18	--	--	55	27	25	41	186
Newton	70	21	--	--	16	15	41	62	225
Oconee	29	5	--	--	33	18	1	13	99
Oglethorpe	96	29	--	--	140	62	93	41	461
Paulding	173	--	--	--	83	10	99	54	419

Table 37.--Net volume[1] of cull trees by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

County	Yellow pines		Other sftwds.		Soft hdwds.		Hard hdwds.		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Peach	5	6	--	--	15	12	8	5	51
Pickens	185	23	2	4	24	15	219	85	557
Pierce	36	21	6	--	145	102	47	--	357
Pike	62	20	--	--	29	40	30	13	194
Polk	24	5	--	--	9	1	132	38	209
Pulaski	5	28	--	--	37	94	15	78	257
Putnam	260	87	--	4	46	16	59	32	504
Quitman	36	16	--	--	25	17	38	75	207
Rabun	46	8	--	--	48	40	367	273	782
Randolph	58	46	--	--	104	136	50	107	501
Richmond	33	9	--	--	99	125	46	34	346
Rockdale	23	4	--	--	1	7	29	4	68
Schley	20	16	--	--	19	32	21	9	117
Screven	29	42	4	54	243	203	177	102	854
Seminole	5	4	1	--	52	40	48	105	255
Spalding	64	11	--	--	25	11	10	27	148
Stephens	33	19	--	--	17	2	84	79	234
Stewart	47	38	--	--	48	117	122	72	444
Sumter	9	--	--	--	31	106	34	44	224
Talbot	144	33	--	5	72	76	77	33	440
Taliaferro	54	6	--	--	19	19	35	16	149
Tattnall	58	24	15	--	51	128	122	67	465
Taylor	20	4	--	--	60	77	113	66	340
Telfair	108	19	--	--	103	95	67	85	477
Terrell	26	6	2	--	67	73	77	58	309
Thomas	7	16	--	--	114	61	31	178	407
Tift	7	4	3	3	116	41	5	13	192
Toombs	2	--	--	--	192	176	10	51	431
Towns	--	--	--	--	22	30	201	263	516
Treutlen	12	12	--	--	36	34	27	18	139
Troup	106	18	--	--	60	58	93	8	343
Turner	16	8	2	1	77	45	25	3	177
Twiggs	59	29	--	--	67	165	60	117	497
Union	22	2	19	19	50	33	340	289	774
Upson	73	33	--	--	86	25	90	54	361
Walker	35	6	--	--	67	19	361	248	736
Walton	123	[illegible]	--	--	34	21	72	25	[illegible]
Ware	107	28	16	181	162	90	34	3	621
Warren	26	8	--	--	54	57	64	31	240
Washington	154	23	--	--	245	232	121	206	981
Wayne	92	5	13	4	77	210	119	65	585
Webster	36	9	--	--	51	49	56	73	274
Wheeler	66	43	--	--	83	86	45	43	366
White	11	--	2	--	14	46	[illegible]	182	[illegible]
Whitfield	25	--	--	--	33	24	184	12	278
Wilcox	35	19	--	2	55	47	39	51	248
Wilkes	169	24	--	--	44	56	44	128	465
Wilkinson	62	20	3	--	123	183	124	308	823
Worth	18	38	11	--	138	64	13	22	304
Total	8,379	3,002	489	637	11,561	11,089	13,663	13,086	61,906

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[1] Sound wood and bark in cull trees and limbs of saw-log-size hardwoods.

Table 38.--Average annual volume of sawtimber cut by county and species group[1/]

(In thousand board feet)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Appling	12,288	1,633	--	--	13,921
Atkinson	4,855	590	3,886	--	9,331
Bacon	6,198	--	--	--	6,198
Baker	12,446	845	49	--	13,340
Baldwin	9,641	--	97	106	9,844
Banks	6,303	--	796	535	7,634
Barrow	4,857	--	1,202	842	6,901
Bartow	1,557	--	--	1,384	2,941
Ben Hill	13,067	--	195	92	13,354
Berrien	19,937	2,340	1,602	--	23,879
Bibb	14,895	--	304	640	15,839
Bleckley	3,610	--	2,582	1,251	7,443
Brantley & Pierce	32,359	2,119	802	--	35,280
Brooks	17,646	194	--	--	17,840
Bryan	28,419	--	2,319	456	31,194
Bulloch	55,356	--	3,244	--	58,600
Burke	16,600	--	541	189	17,330
Butts	15,779	--	304	--	16,083
Calhoun	15,815	--	6,588	706	23,109
Camden	32,664	182	5,130	1,367	39,343
Candler	21,253	--	1,106	--	22,359
Carroll	12,340	--	394	897	13,631
Catoosa	2,626	--	207	445	3,278
Charlton	23,476	--	--	--	23,476
Chatham	12,533	--	952	369	13,854
Chattahoochee	1,811	--	116	--	1,927
Chattooga	5,026	--	--	--	5,026
Cherokee	29,027	--	7,115	6,214	42,356
Clarke	6,558	--	--	--	6,558
Clay	8,451	--	1,088	3,975	13,514
Clayton	4,047	--	--	--	4,047
Clinch	32,805	538	88	--	33,431
Cobb	7,926	--	--	--	7,926
Coffee	54,562	--	48	--	54,610
Colquitt	32,027	--	2,184	--	34,211
Columbia	16,425	--	3,163	--	19,588
Cook	8,766	184	4,068	--	13,018
Coweta	31,689	--	5,165	1,858	38,712
Crawford	15,273	--	--	385	15,658
Crisp	9,211	555	354	--	10,120
Dade	5,059	3,124	6,325	2,584	17,092
Dawson	5,276	--	--	990	6,266
Decatur	14,669	--	2,857	532	18,058
De Kalb	7,345	--	--	--	7,345
Dodge	23,546	--	3,063	--	26,609
Dooly	9,710	--	81	--	9,791
Dougherty	3,824	--	912	4,146	8,882
Douglas	1,526	--	3,126	636	5,288
Early	37,805	--	12,050	7,544	57,399
Echols	23,167	--	--	--	23,167
Effingham	35,206	2,649	7,109	2,519	47,483
Elbert	11,565	--	1,273	697	13,535
Emanuel	31,685	--	5,033	12,843	49,561
Evans	8,915	639	--	--	9,554

Table 38.--Average annual volume of sawtimber cut by county and species group[1/]

(continued)

(In thousand board feet)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Fannin	1,529	--	--	9,024	10,553
Fayette	6,620	--	1,507	--	8,127
Floyd	14,632	--	670	1,609	16,911
Forsyth	--	--	--	2,114	2,114
Franklin	7,619	--	--	2,429	10,048
Fulton	9,533	--	1,702	478	11,713
Gilmer	1,463	356	9,930	7,055	18,804
Glascock	3,982	--	4,319	130	8,431
Glynn	11,608	--	2,666	2,379	16,653
Gordon	8,431	--	--	--	8,431
Grady	27,792	--	4,533	--	32,325
Greene	39,407	--	4,776	--	44,183
Gwinnett	11,378	--	885	--	12,263
Habersham	8,947	--	--	511	9,458
Hall	16,619	--	731	3,141	20,491
Hancock	26,197	--	1,805	--	28,002
Haralson	9,914	--	--	2,543	12,457
Harris	40,861	--	1,579	--	42,440
Hart	898	--	--	269	1,167
Heard	13,448	--	908	3,050	17,406
Henry	22,473	--	5,886	558	28,917
Houston	9,353	427	1,019	3,190	13,989
Irwin	9,348	--	--	--	9,348
Jackson	12,157	--	443	--	12,600
Jasper	29,882	--	--	3,092	32,974
Jeff Davis	25,658	--	--	--	25,658
Jefferson	21,215	--	6,425	--	27,640
Jenkins	6,048	216	2,324	--	8,588
Johnson	7,991	--	1,482	--	9,473
Jones	23,253	--	3,606	1,798	28,657
Lamar	12,628	--	4,079	1,307	18,014
Lanier	3,234	247	--	--	3,481
Laurens	41,601	--	13,874	6,038	61,513
Lee	2,637	--	2,038	2,137	6,812
Liberty	15,675	--	12,644	400	28,719
Lincoln	12,572	--	273	--	12,845
Long	16,592	659	458	--	17,709
Lowndes	26,704	1,981	371	--	29,056
Lumpkin	9,244	--	1,540	4,742	15,526
McDuffie	7,750	--	3,419	--	11,169
McIntosh	26,481	--	2,121	--	28,602
Macon	10,136	--	2,757	--	12,893
Madison	2,874	300	--	1,153	4,327
Marion	19,120	--	953	128	20,201
Meriwether	25.674	--	21,540	954	48,168
Miller	15,992	--	--	--	15,992
Mitchell	10,699	310	5,018	2,508	[illegible]
Monroe	12,233	--	1,680	--	13,913
Montgomery	11,945	--	4,498	1,090	17,533
Morgan	54,951	--	3,124	320	58,395
Murray	23,678	--	--	1,671	25,349
Muscogee	9,661	--	[illegible]	[illegible]	10,032
Newton	10,922	--	1,605	3,577	16,104
Oconee	[illegible]	--	[illegible]	292	9,387
Oglethorpe	8,441	--	--	--	8,441

Table 38.--Average annual volume of sawtimber cut by county and species group[1/]

(continued)

(In thousand board feet)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Paulding	7,749	--	6,048	--	13,797
Peach	4,205	--	445	98	4,748
Pickens	4,855	--	--	--	4,855
Pike	20,904	--	9,593	782	31,279
Polk	8,436	--	--	655	9,091
Pulaski	7,511	--	5,639	--	13,150
Putnam	8,439	--	586	204	9,229
Quitman	10,063	--	1,862	3,365	15,290
Rabun	6,536	2,645	1,720	4,114	15,015
Randolph	9,718	--	13,274	1,133	24,125
Richmond	4,761	241	4,831	1,269	11,102
Rockdale	8,987	--	--	539	9,526
Schley	10,580	--	--	--	10,580
Screven	24,573	454	14,886	--	39,913
Seminole	11,267	--	34	--	11,301
Spalding	22,559	--	4,061	--	26,620
Stephens	2,163	--	--	2,250	4,413
Stewart	15,670	--	1,267	--	16,937
Sumter	22,952	--	2,353	--	25,305
Talbot	21,013	--	9,816	--	30,829
Taliaferro	12,394	--	--	173	12,567
Tattnall	14,222	--	--	--	14,222
Taylor	9,448	--	13,877	2,173	25,498
Telfair	65,466	--	1,728	--	67,194
Terrell	3,097	--	7,350	--	10,447
Thomas	22,811	--	1,444	215	24,470
Tift	15,810	--	--	--	15,810
Toombs	28,956	1,781	999	--	31,736
Towns	--	--	--	3,157	3,157
Treutlen	4,381	--	1,848	--	6,229
Troup	7,937	--	1,531	334	9,802
Turner	10,832	221	83	--	11,136
Twiggs	41,780	452	2,956	1,497	46,685
Union	5,552	--	--	1,530	7,082
Upson	10,111	--	2,197	--	12,308
Walker	20,480	--	--	2,012	22,492
Walton	10,440	--	4,310	--	14,750
Ware	14,576	--	--	--	14,576
Warren	19,836	--	6,994	--	26,830
Washington	38,861	--	13,536	3,608	56,005
Wayne	19,302	4,052	--	--	23,354
Webster	5,501	--	4,375	872	10,748
Wheeler	12,271	--	3,061	--	15,332
White	1,845	--	--	1,504	3,349
Whitfield	8,353	--	--	--	8,353
Wilcox	8,875	1,694	--	--	10,569
Wilkes	42,081	--	10,591	--	52,672
Wilkinson	10,062	--	2,364	15,970	28,396
Worth	26,980	--	449	91	27,520
Total	2,429,455	31,628	397,052	171,530	3,029,665

[1/] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 39.--Average annual volume of growing stock cut by county and species group[1]

(In thousand cords)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Appling	63	7	--	--	70
Atkinson	33	1	12	--	46
Bacon	21	--	--	--	21
Baker	36	2	1	--	39
Baldwin	32	--	1	1	34
Banks	36	--	3	2	41
Barrow	15	--	3	2	20
Bartow	9	--	--	4	13
Ben Hill	43	--	1	1	45
Berrien	62	5	4	--	71
Bibb	46	--	1	3	50
Bleckley	10	--	9	4	23
Brantley & Pierce	107	4	2	--	113
Brooks	56	--	--	--	56
Bryan	90	--	6	1	97
Bulloch	179	--	13	--	192
Burke	45	--	5	3	53
Butts	46	--	1	--	47
Calhoun	47	--	19	2	68
Camden	108	1	14	4	127
Candler	72	--	4	--	76
Carroll	47	--	4	17	68
Catoosa	16	--	1	2	19
Charlton	110	--	--	--	110
Chatham	35	--	3	3	41
Chattahoochee	5	--	1	--	6
Chattooga	18	--	--	9	27
Cherokee	113	--	20	21	154
Clarke	22	--	--	--	22
Clay	23	--	3	11	37
Clayton	14	--	--	--	14
Clinch	124	2	1	--	127
Cobb	33	--	--	--	33
Coffee	181	--	3	--	184
Colquitt	93	--	5	--	98
Columbia	45	--	9	1	55
Cook	28	1	10	--	39
Coweta	118	--	25	5	148
Crawford	47	--	--	1	48
Crisp	29	2	1	--	32
Dade	21	8	15	7	51
Dawson	21	--	1	4	26
Decatur	61	--	8	1	70
De Kalb	25	--	--	--	25
Dodge	68	--	9	--	77
Dooly	28	--	1	1	30
Dougherty	16	--	2	13	[illegible]
Douglas	6	--	8	2	16
Early	103	--	30	22	155
Echols	79	--	--	--	79
Effingham	118	7	20	8	[illegible]
Elbert	51	--	10	19	80
Emanuel	98	--	19	[illegible]	[illegible]
Evans	29	1	--	--	[illegible]

Table 39.--Average annual volume of growing stock cut by county and species group[1]

(continued)

(In thousand cords)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Fannin	7	--	--	24	31
Fayette	25	--	6	--	31
Floyd	55	--	2	5	62
Forsyth	1	--	--	24	25
Franklin	31	--	--	9	40
Fulton	43	--	5	2	50
Gilmer	8	2	24	21	55
Glascock	14	--	11	--	25
Glynn	37	--	7	7	51
Gordon	31	--	--	--	31
Grady	93	--	12	--	105
Greene	131	--	15	--	146
Gwinnett	46	--	3	--	49
Habersham	28	--	--	2	30
Hall	83	--	2	9	94
Hancock	87	--	11	2	100
Haralson	36	--	--	9	45
Harris	139	--	4	3	146
Hart	10	--	--	2	12
Heard	49	--	3	8	60
Henry	78	--	15	2	95
Houston	22	1	3	8	34
Irwin	32	--	--	--	32
Jackson	49	1	1	--	51
Jasper	105	--	--	8	113
Jeff Davis	72	--	--	--	72
Jefferson	58	--	17	--	75
Jenkins	23	1	7	1	32
Johnson	29	--	5	--	34
Jones	94	--	18	8	120
Lamar	37	--	11	6	54
Lanier	9	1	--	--	10
Laurens	143	--	36	16	195
Lee	7	--	5	6	18
Liberty	52	--	48	1	101
Lincoln	47	--	1	--	48
Long	59	2	2	--	63
Lowndes	83	5	4	1	93
Lumpkin	35	--	4	18	57
McDuffie	26	--	9	--	35
McIntosh	85	--	7	--	92
Macon	30	--	7	--	37
Madison	19	1	--	4	24
Marion	52	--	5	2	59
Meriwether	81	--	56	12	149
Miller	55	--	--	--	55
Mitchell	41	1	15	8	65
Monroe	37	--	5	--	42
Montgomery	54	--	13	3	70
Morgan	177	--	8	2	187
Murray	90	--	--	5	95
Muscogee	34	--	3	1	38
Newton	47	1	4	9	61
Oconee	20	--	11	1	32
Oglethorpe	51	--	--	--	51

Table 39.--Average annual volume of growing stock cut by county and species group[1/]
(continued)

(In thousand cords)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Paulding	36	--	15	--	51
Peach	11	--	1	--	12
Pickens	32	--	--	--	32
Pike	58	--	26	4	88
Polk	25	--	--	2	27
Pulaski	19	--	14	--	33
Putnam	27	--	5	3	35
Quitman	26	--	6	9	41
Rabun	22	6	6	11	45
Randolph	25	--	36	3	64
Richmond	20	1	13	3	37
Rockdale	44	--	--	2	46
Schley	36	--	--	--	36
Screven	81	5	38	--	124
Seminole	37	--	--	--	37
Spalding	78	--	10	--	88
Stephens	8	--	--	10	18
Stewart	50	--	4	--	54
Sumter	62	--	7	--	69
Talbot	71	--	38	1	110
Taliaferro	60	--	--	1	61
Tattnall	55	--	--	1	56
Taylor	32	--	33	5	70
Telfair	203	--	7	--	210
Terrell	8	--	19	--	27
Thomas	51	--	3	1	55
Tift	41	--	--	--	41
Toombs	105	4	8	--	117
Towns	--	--	--	7	7
Treutlen	12	--	7	--	19
Troup	40	--	4	1	45
Turner	38	1	--	--	39
Twiggs	115	1	8	4	128
Union	21	--	1	12	34
Upson	33	--	7	--	40
Walker	70	--	--	8	78
Walton	44	--	15	1	60
Ware	60	--	--	--	60
Warren	67	--	18	--	85
Washington	106	--	35	10	151
Wayne	67	9	--	--	76
Webster	16	--	11	2	29
Wheeler	35	--	11	--	46
White	8	--	--	7	15
Whitfield	25	--	--	--	25
Wilcox	30	6	--	--	36
Wilkes	139	--	26	--	165
Wilkinson	30	--	7	40	77
Worth	89	--	1	--	90
Total	8,236	90	1,173	602	10,101

[1/] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

STANDARD FOREST SURVEY TABLES

The tables which appear on the following pages have been standardized as to format and contents so that forest statistics for Georgia can be compared or combined with similar statistics for other states. This practice is being followed to provide readers with comparable data on forest area, timber volumes, growth, and timber cut for each state as the initial surveys or resurveys are completed.

Table 40.--Land area by major classes of land, Georgia, 1953

Class of land	Area
	Thousand acres
Forest:	
Commercial	23,969
Noncommercial	
Productive-reserved	18
Unproductive	70
Total forest land	24,057
Nonforest land[1]	13,372
Total, all classes	37,429

[1] Includes 51,600 acres of Census water created since 1950 and 178,200 acres of water in small lakes and streams defined by the Bureau of the Census as land area.

Table 41.--Commercial forest land area by ownership and stand-size class, Georgia, 1953

(In thousand acres)

Ownership class	Total	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Nonstocked & other areas[1]
Federally owned or managed:					
National forest	641	285	287	69	--
Indian	--	--	--	--	--
Bur. Land Mgmt.	--	--	--	--	--
Other	916	311	229	315	61
Total Federal	1,557	596	516	[illegible]	61
State	102	39	[illegible]	27	3
County & municipal	23	4	9	9	1
Private:					
Farm	15,854	3,876	5,930	4,925	1,123
Industrial & other	6,433	1,840	2,326	1,855	412
All ownerships	23,969	6,355	8,814	7,200	[illegible]

[1] Includes areas not classified elsewhere.

Table 42.--Area of commercial forest land by major forest types, Georgia, 1953

Forest type	Thousand acres
White-red-jack pine	22
Spruce-fir	--
Longleaf-slash pine	6,246
Loblolly-shortleaf pine	7,553
Oak-pine	2,337
Oak-hickory	3,390
Oak-gum-cypress	4,421
Elm-ash-cottonwood	--
Maple-beech-birch	--
Aspen-birch	--
Total	23,969

Table 43.--Net volume of live sawtimber and growing stock on commercial forest land by stand-size class, Georgia, 1953

Stand-size class	Sawtimber	Growing stock
	Million bd. ft.	Million cu. ft.
Sawtimber stands	25,735	7,414
Poletimber stands	8,109	4,272
Seedling & sapling stands	2,603	883
Nonstocked and other areas not elsewhere classified	473	123
Total	36,920	12,692

Table 44.--Net volume of live sawtimber and growing stock on commercial forest land by ownership class, Georgia, 1953

Ownership class	Sawtimber	Growing stock
	Million bd. ft.	Million cu. ft.
Federally owned or managed:		
National forest	1,577	464
Indian	--	--
Bureau of Land Mgmt.	--	--
Other	2,388	581
Total Federal	3,965	1,045
State	236	73
County and municipal	39	15
Private:		
Farm	21,387	7,801
Industrial and other	11,293	3,758
Total private	32,680	11,559
All ownerships	36,920	12,692

Table 45.--Net volume of live sawtimber and growing stock on commercial forest land by species, Georgia, 1953

Species	Sawtimber	Growing stock
	Million bd. ft.	Million cu. ft.
Softwoods:		
Longleaf and slash pines	11,052	3,662
Shortleaf and loblolly pines	9,532	3,344
Other southern yellow pines	767	248
Spruce and balsam fir	--	--
White and red pines	121	31
Jack pine	--	--
Hemlock	49	9
Cypress	1,566	472
Other eastern softwoods	25	7
Total softwoods	23,112	7,773
Hardwoods:		
White & swamp chestnut oaks	838	307
Other white oaks	841	302
Northern red, swamp red, & shumard oaks	499	133
Other red oaks	2,652	862
Yellow birch	--	--
Sugar maple	7	6
Soft maple	444	193
Beech	85	19
Sweetgum	2,107	769
Tupelo and blackgum	2,919	1,142
Ash	294	118
Hickory	864	291
Cottonwood and aspen	25	6
Basswood	26	7
Yellow-poplar	1,220	378
Black walnut	5	2
Other eastern hardwoods	982	384
Total hardwoods	13,808	4,919
Total all species	36,920	12,692

Table 46.--Net volume of live sawtimber on commercial forest land by diameter-class group and species, Georgia, 1953

(In million board feet)

Species	Diameter-class groups: 10-inch	12-inch	14-inch	16-inch	18-inch	20-inch and larger	Total
So. yellow pines	6,613	6,202	3,969	2,187	1,165	1,215	21,351
White and red pines	15	21	10	31	14	30	121
Other eastern softwoods	341	407	297	127	119	349	1,640
Total softwoods	6,969	6,630	4,276	2,345	1,298	1,594	23,112
White & swamp chestnut oaks	--	162	160	123	102	291	838
Other white oaks	--	174	146	121	92	308	841
No. red, swamp red, & shumard oaks	--	71	83	78	69	198	499
Other red oaks	--	492	505	402	368	885	2,652
Yellow birch	--	--	--	--	--	--	--
Sugar maple	--	1	1	1	--	4	7
Beech	--	5	9	17	20	34	85
Sweetgum	--	435	503	381	293	495	2,107
Tupelo & blackgum	--	849	801	523	319	427	2,919
Yellow-poplar	--	253	276	212	199	280	[illegible]
Other eastern hardwoods	--	640	644	456	368	[illegible]	[illegible]
Total hardwoods	--	3,141	3,128	2,314	1,830	[illegible]	[illegible]
Total all species	6,969	9,771	7,404	4,659	3,128	[illegible]	[illegible]

Table 47.--Net volume of all timber on commercial forest land by class of material and species group, Georgia, 1953

(In million cubic feet)

Class of material	Total	Softwoods	Hardwoods
Growing stock:			
Sawtimber trees			
Saw-log portion	6,623	4,237	2,386
Upper stem portion	1,551	976	575
Total sawtimber	8,174	5,213	2,961
Poletimber trees	4,518	2,560	1,958
Total growing stock	12,692	7,773	4,919
Other material:			
Sound cull trees	3,031	833	2,198
Rotten cull trees	665	83	582
Hardwood limbs	825	--	825
Salvable dead trees	9	3	6
Total other material	4,530	919	3,611
Total, all timber	17,222	8,692	8,530

Table 48.--Net annual growth, annual mortality, and annual cut of live sawtimber and growing stock on commercial forest land by species group, Georgia, 1952

Item	Sawtimber			Growing stock		
	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
	Million board feet			Million cubic feet		
Net annual growth	3,174	2,370	804	869	590	279
Annual mortality	242	152	90	80	51	29
Annual timber cut						
Timber products	2,804	2,160	644	657	522	135
Logging residues	95	39	56	93	51	42
Total cut	2,899	2,199	700	750	573	177

Table 49.--Output of timber products and annual cut of live sawtimber and growing stock, Georgia, 1952

Product	Output of timber products					Annual cut of sawtimber			Annual cut of growing stock		
	Volume in standard units		Roundwood volume								
	Standard units	Number	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
			Thousand cubic feet			Thousand board feet			Thousand cubic feet		
Saw logs	M bd. ft.[1]	2,321,558	388,047	311,544	76,503	2,162,173	1,655,800	506,373	459,833	354,430	105,403
Veneer logs and bolts	M bd. ft.[1]	141,194	22,656	325	22,331	149,025	1,885	147,140	32,199	437	31,762
Cooperage logs and bolts	M bd. ft.[1]	3,178	544	496	48	3,282	2,940	342	654	576	78
Pulpwood[2]	Std. cords[3]	2,511,431	176,531	168,707	7,824	414,310	401,425	12,885	166,866	160,086	6,780
Fuelwood[2]	Std. cords[4]	1,640,332	104,642	49,823	54,819	41,922	31,706	10,216	52,898	29,504	23,394
Piling	M linear ft.	748	510	510	--	2,468	2,468	--	598	598	--
Poles	M pieces	517	6,411	6,411	--	31,640	31,640	--	7,393	7,393	--
Posts	M pieces	13,090	8,600	3,952	4,648	5,262	2,418	2,844	5,369	2,467	2,902
Hewn ties	M pieces	1,819	10,823	9,871	952	66,927	60,719	6,208	15,127	13,620	1,507
Mine timbers	M cu. ft.	--	--	--	--	--	--	--	--	--	--
Miscellaneous[5]	M cu. ft.[6]	7,766	7,766	3,539	4,227	22,318	7,795	14,523	8,725	3,940	4,785
Total	--	--	726,530	555,178	171,352	2,899,327	2,198,796	700,531	749,662	573,051	176,611

[1] International 1/4-inch rule.

[2] Rough wood basis.

[3] Not including 1,629 thousand cubic feet of wood from mill residues used for pulp and other fibre.

[4] Not including 88,724 thousand cubic feet of wood from mill residues used for domestic and industrial fuel.

[5] Includes chemical wood, excelsior bolts, handle stock, shingle bolts, farm timbers, etc.

[6] Not including 1,767 thousand cubic feet of mill residues used for miscellaneous products.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

> Pine types: Forests in which 50 percent or more of the stand is in pine species. Plurality of volume or number of trees is used to determine the specific type.
>
> Oak-pine type: Forests in which 50 percent or more of the stand is hardwoods, usually upland oaks, but in which southern yellow pines make up 25-49 percent of the stand.

Oak-hickory type

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type

Lowland hardwood: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, elm, maple, and associated species, except where pines comprise 25-49 percent of the stand.

Cypress: Bottomland forests in which 50 percent or more of the stand is cypress, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber. To be merchantable all saw logs must be at least 8 feet long and at least 50 percent sound. They must also meet the following requirements:

Softwood logs must have a scaling diameter of 6 inches or larger, and sweep or crook must not exceed two-thirds of the scaling diameter.

Hardwood logs must have a scaling diameter of 8 inches or larger and must pass specifications[1] for standard lumber logs, or tie and timber logs.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber-size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes longleaf, slash, loblolly, pond, Virginia, and shortleaf pine.

Other softwoods: Cypress, white pine, hemlock, eastern redcedar, and Atlantic whitecedar.

Soft-textured hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, cucumber, willow, and sweetbay.

Hard-textured hardwoods: All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

1/ For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737, 1949.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of all sawtimber-size hardwoods is shown separately.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 73 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The estimated volume of net growth includes the growth on the present growing stock, the growth on trees which died or were cut during the year, and the ingrowth resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on growth of sound trees. Growth of "other material" is not included.

In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger.

Gum Naval Stores Conditions

Round timber.--A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have not been worked for naval stores.

Working.--Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced: Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced: Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting.--Longleaf and slash pine trees with a worked-out or abandoned front face and on which back-facing has not been started.

Worked-out.--Longleaf and slash pine trees on which two or more faces have been worked out and with no possibility of supporting another face.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h.classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1951-53 survey provided an estimate of the total forest area in the State with a standard error of ±0.3 percent. The probabilities are two out of three that the actual forest area is within ±0.3 percent of the estimated acreage. The standard error per million acres was ±1.5 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±1.2 percent, or ±4.3 percent per billion cubic feet. Here again, the probabilities are two out of three that the actual volume does not vary from the estimated volume by more than this percentage. The error of the volume in standard cords was not computed but it should be approximately the same.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±1.4 percent.

Growth.--Estimates of timber growth are based on measurements of radial growth in sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number and size of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding date of inventory were recorded, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±4.3 percent, or ±3.8 percent per billion cubic feet. Estimates of the volume cut by product were made using the best available statistics on production.

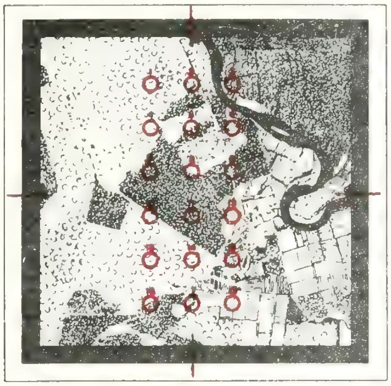
Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors on county data are shown below:

Item	Percent of Error	
	Low	High
Forest area	±0.9	±12.3
Growing stock volume	±7.0	±15.7
Board-foot volume	±6.9	±23.4

HOW THE FOREST INVENTORY IS MADE

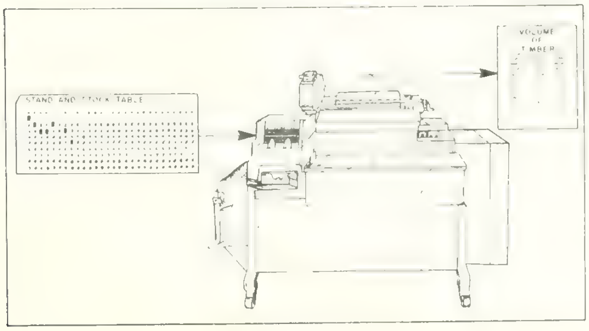
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia

No. 22 - Southern Forests as a Source of Pulpwood

No. 23 - 1946 Pulpwood Production by County in the Southeast

No. 24 - Southern Pulpwood Production and the Timber Supply

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina

No. 26 - 1946 Commodity Drain by County from South Carolina Forests

No. 27 - 1947 Pulpwood Production by County in the Southeast

No. 28 - South Carolina's Forest Resources, 1947

No. 29 - 1948 Pulpwood Production by County in the Southeast

No. 30 - Forest Resources of Northeast Florida, 1949

No. 31 - Forest Resources of Central Florida, 1949

No. 32 - Forest Resources of Northwest Florida, 1949

No. 33 - Forest Resources of South Florida, 1949

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948

No. 35 - 1949 Pulpwood Production in the South (Out of print)

No. 36 - Forest Statistics for Florida, 1949

No. 37 - Forest Statistics for Southwest Georgia, 1951

No. 38 - 1951 Pulpwood Production in the South

No. 39 - Forest Statistics for Southeast Georgia, 1952

No. 40 - Forest Statistics for Central Georgia, 1952

No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952

No. 42 - Forest Statistics for North Central and North Georgia, 1953

No. 43 - 1953 Pulpwood Production in the South

OTHER REPORTS

Pulpwood Production in the South, 1950. Forest Survey Release No. 69

1952 Pulpwood Production in the South. Forest Survey Release No. 72

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3

The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

Agriculture--Asheville

FOREST SURVEY RELEASE NO. 45 JUNE 1955

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FOREST STATISTICS FOR THE NORTHERN COASTAL PLAIN OF NORTH CAROLINA, 1955

by

James F. McCormack, Forester
Division of Forest Economics

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
E. L. Demmon - Director

In cooperation with the
NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
DIVISION OF FORESTRY
F. H. Claridge - State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

The forest resources of the State of North Carolina were originally inventoried by the Forest Survey during the period 1937-38, and these findings have been published. A resurvey of the Southern Coastal Plain was made in 1952 and the statistics were published in Forest Survey Release No. 41, September 1953. The survey has now been completed in the Northern Coastal Plain and is continuing in other areas of the State.

ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges the cooperation of Fred H. Claridge, State Forester, for providing personnel and equipment for a portion of the field survey.

Forest survey work at the Southeastern Station is under the direction of James W. Cruikshank. Training and field supervision were provided by Robert W. Larson and L. C. Nix. Photo interpretation was done by R. C. Aldrich and mensurational work by Mackay B. Bryan. Office compilation was under the supervision of Agnes Nichols, assisted by Louise Shuford, Sammy Wenningham, Eunice Gamble, and Camilla Young.

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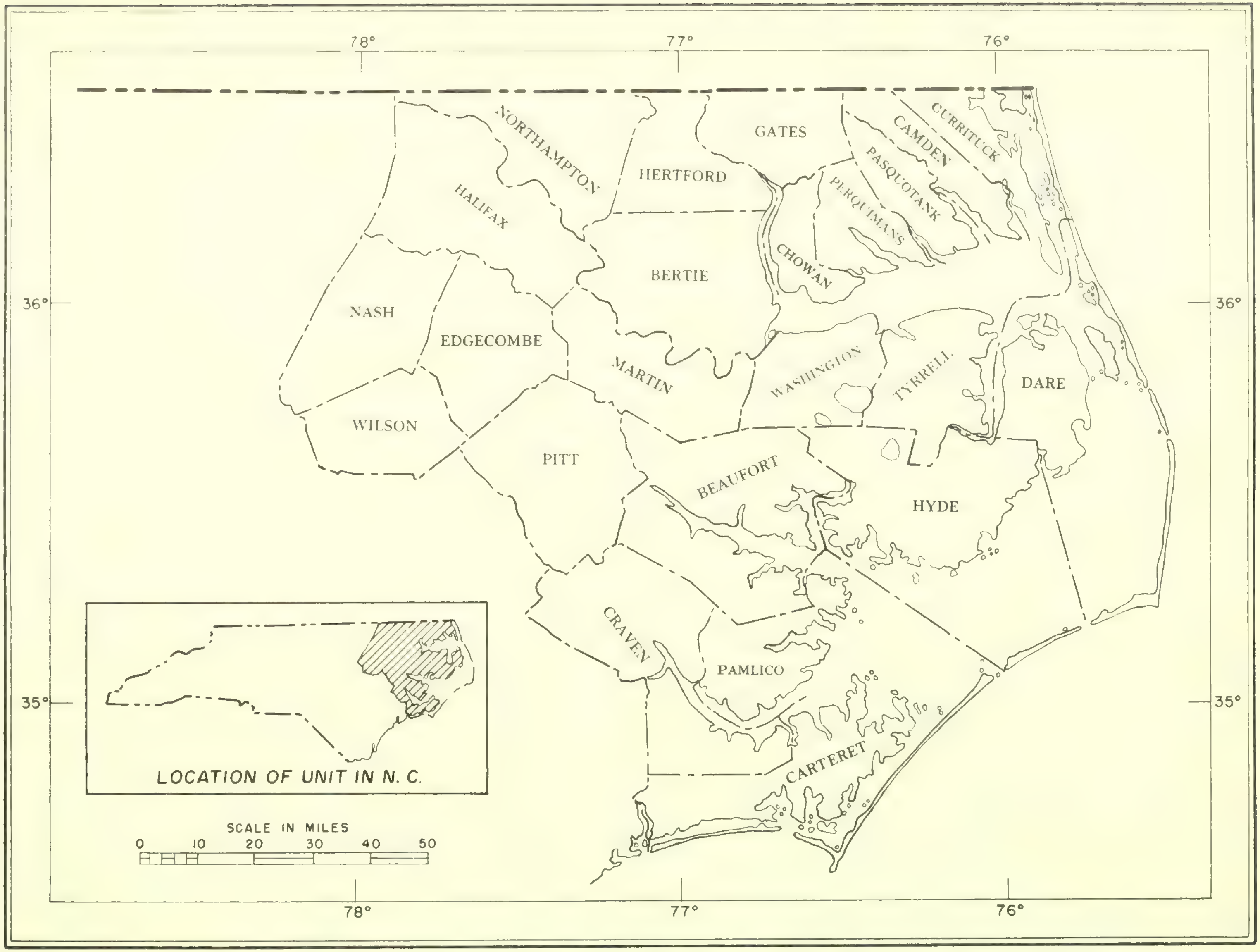

Figure 1.--Counties in the Northern Coastal Plain of North Carolina included in Survey Unit No. 2.

FOREST STATISTICS FOR THE NORTHERN COASTAL PLAIN
OF NORTH CAROLINA, 1955

This is a progress report on the resurvey of forest resources in North Carolina which is now under way. It presents statistical data on forest area, timber volumes, growth, and the amount of timber cut for the 23-county area in the Northern Coastal Plain (fig. 1). The basic information was obtained between January 1954 and February 1955 from 1,920 one-fifth acre forest sample plots. In addition, 375 non-forest plots were checked on the ground to improve the accuracy of the forest area estimate. Procedures used in conducting the survey are described in more detail on page 44.

This area was first inventoried by the Forest Survey in 1937. Since then, vast quantities of timber have been cut, and new stands have grown up to replace the old. Changes in land use and ownership have been widespread. Improvement in forest protection and management practices have also had an effect on the timber stands which exist today. The trends and changes pointed out in the following pages all stem from a comparison of statistics for both surveys. Data for the 1937 survey were adjusted wherever necessary to remove differences due to definition or other standards used, so that valid comparisons could be made.

HIGHLIGHTS AND TRENDS FOUND BY THE 1955 SURVEY

Forest area now 9 percent greater.--The 23 counties in the Northern Coastal Plain of North Carolina contain a total land area of 6.7 million acres. In 1955, forests were found to occupy 4.4 million acres, or about two-thirds of the area. Since 1937 the acreage of forest land has increased 357 thousand acres, a gain of 9 percent. Cropland, pasture, and other agricultural uses occupy

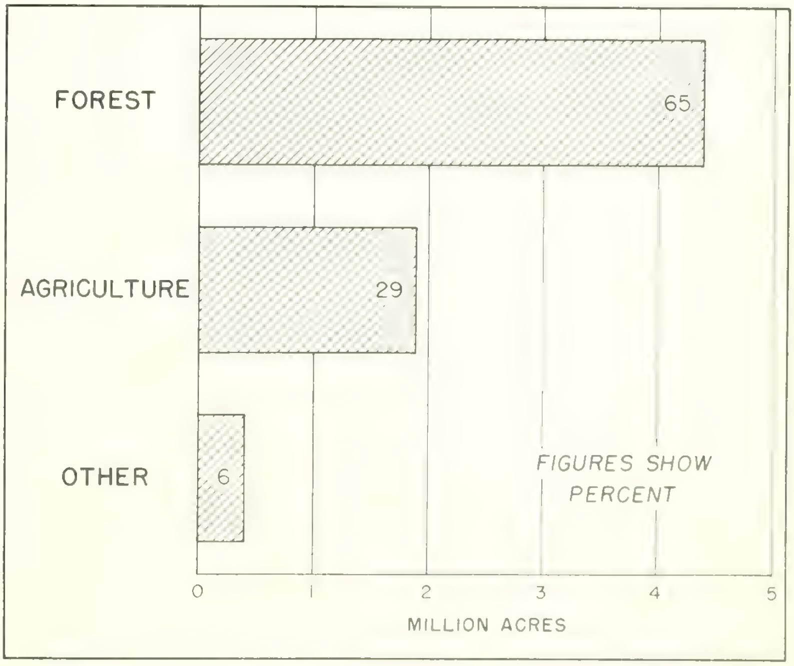

Figure 2.--Use of land in the Northern Coastal Plain of North Carolina.

1.9 million acres, and extensive areas of marsh and sand dunes exist in the coastal region. The proportions of land in forest and agricultural use are almost identical with those found in the Southern Coastal Plain in 1952.

Increases in forest area occurred in all but 4 of the 23 counties. Heaviest gains were recorded in the western portion of the unit and in the area north of Albemarle Sound, where abandonment of farmland in past years has been a contributing factor.

The Tidewater country in the eastern portion of the unit is a low, flat, poorly drained area containing broad expanses of swamp and pocosin. The word "pocosin" is believed to be of Indian origin meaning "swamp on a hill," and it describes a forest type peculiar to the coastal plain. An elevated rim around the circumference prevents adequate drainage. In the central portion of these pocosins a deep muck soil and a high water table permit only scrubby timber growth. Over 260 thousand acres of pocosin were classed as unproductive forest land because of inability to produce timber suitable for commercial use.

The bulk of the commercial forest acreage is in farm woodlands which contain 2.4 million acres, or 58 percent of the total. Industrial and other private owners hold 1.6 million acres, making the total area in private ownership slightly more than 4.0 million acres. Public ownership of commercial forest land amounts to 94 thousand acres, or only about 2 percent. Most of it is in the Croatan National Forest and the Cherry Point Marine Air Station in Carteret and Craven Counties, and along the right-of-way of the Intracoastal Waterway.

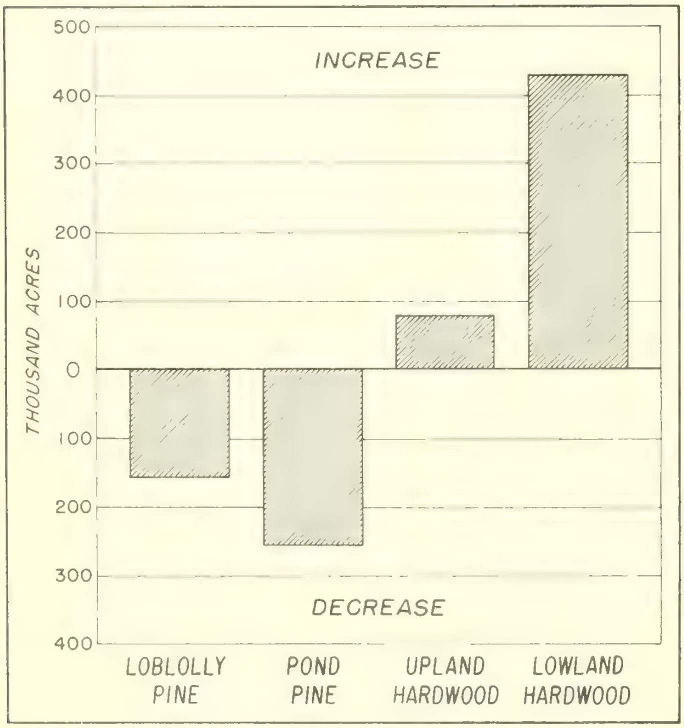

Figure 3.--Change in area of forest types, 1937 to 1955.

Acreage of pine types reduced.--A comparison of forest areas for the two surveys reveals a decrease of 412 thousand acres in pine forest types (fig. 3). The proportion of pine types existing in 1937 was 69 percent, but only 58 percent of the plots were classified as pine in 1955. In making this comparison, the 1937 type specifications were used for both surveys to provide a valid estimate of change.

Conversion of pine types to hardwoods has shown up as a persistent trend in the Coastal Plain area of North Carolina and in other areas of the Southeast as well. It usually occurs when the more valuable pine species are cut out of mixed stands, leaving hardwoods to occupy the available growing space. To make matters worse, the residual hardwood stands often contain a high proportion of poor-quality material.

Small trees rise sharply in number.--The number of trees in all classes up to 16 inches in diameter shows a marked increase in both softwood and hardwood species groups, while the larger trees show decreases (fig. 4). These changes result from a number of factors which have influenced the development and structure of the forest stands in recent years.

Increases in the number of small trees are largely the result of better forest protection and a rapid rate of growth. A very promising feature of the change is the 64-percent increase in number of 2- and 4-inch pine trees. This means there are 150 million more young pine saplings in the present stands which will form an important part of the oncoming crop of timber. Pines in the pole and small sawtimber sizes have also made gains.

It is also apparent from figure 4 that increases in small hardwood trees of volume size have been considerably greater than in pine. This change has been brought about by continued heavy cutting of the preferred pine species. The larger, more valuable trees in both species groups have also declined in number because of heavy use. Changes in timber volume which are discussed on the following pages can be traced directly to these changes in stand structure.

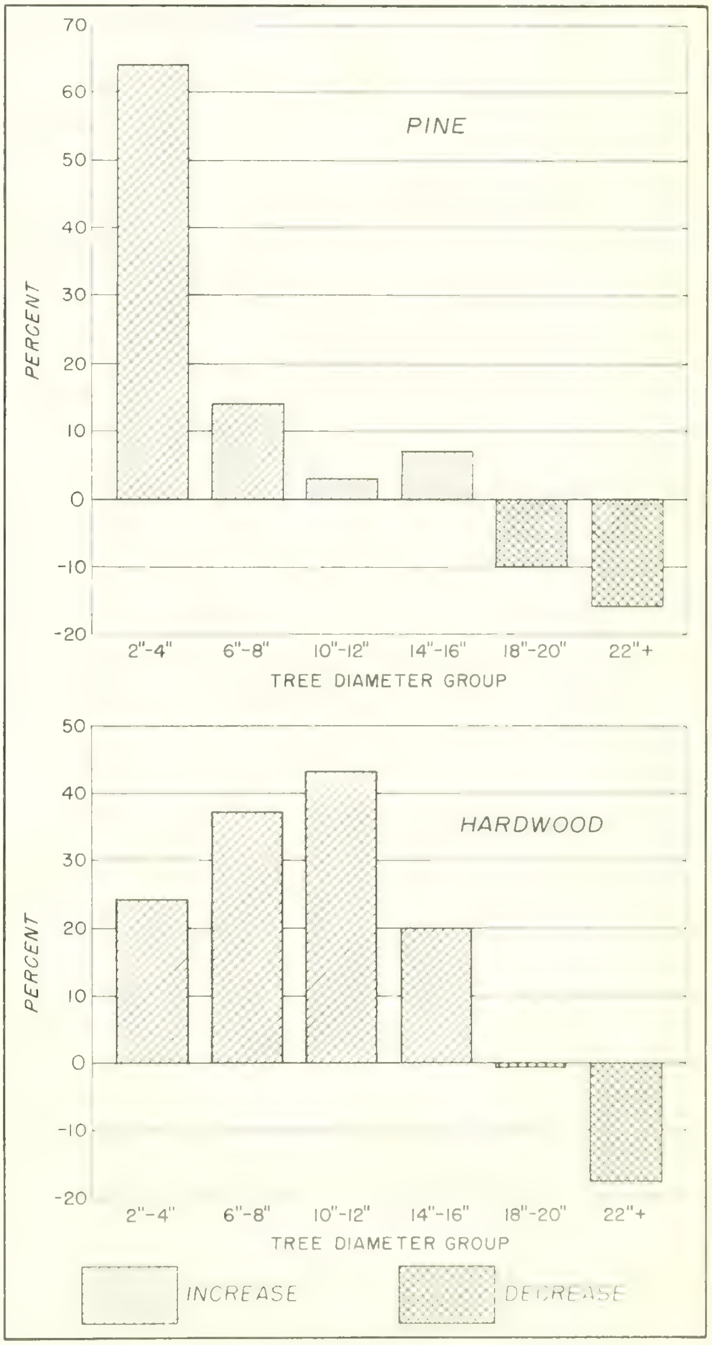

Figure 4.--Change in number of sound trees since 1937.

Pine sawtimber volume holds its own.--One important highlight of the 1955 survey is the fact that yellow pine sawtimber volume has held up very well in spite of heavy demand in recent years. There is now less longleaf, loblolly, and shortleaf pine but more pond pine available. Pond pine is usually found on wet or swampy sites and is less accessible. Losses in large trees have been offset by increases in small trees. The net result is a slight increase in total pine volume as indicated in table A.

Table A.--Comparison of sawtimber volume, 1937 and 1955

Species group	1937[1]	1955	Change	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Yellow pines	9,064	9,142	+ 78	+ 1
Cypress and cedar	1,228	934	-294	-24
Hardwoods	5,777	6,218	+441	+ 8
All species	16,069	16,294	+225	+ 1

[1] Original survey volumes have been recomputed to allow for differences in standards between the two surveys and to provide a uniform basis for comparison. Thus, the 1937 estimates shown here will not agree with the volumes previously published.

Throughout the range of yellow pine in this unit many stands are found growing on excellent sites. The sawtimber stands have better than average stocking, and the average volume per acre is probably the highest to be found anywhere in the State. Under these conditions, growth has been able to replace the amount of pine cut and used for all the various industrial and domestic purposes. However, a larger proportion of the board-foot volume is now found in small sawtimber trees.

During the period between surveys hardwood sawtimber increased by 441 million board feet, or 8 percent, while the volume of cypress and whitecedar went down nearly 25 percent. Cypress and cedar are durable species much in demand for boat and water tank construction. The drain on whitecedar has been particularly heavy, reducing the volume of this species by nearly 65 percent. There were slight decreases in the volume of blackgum, sweetgum, and yellow-poplar, and heavy increases in other hardwoods, particularly oaks.

Loblolly pine is principal species.--The most important timber tree in the Northern Coastal Plain is loblolly pine. This species alone, with a volume in excess of 7 billion board feet, makes up 75 percent of the softwood and 45 percent of the total sawtimber volume (fig. 5). Pond pine and cypress are the only other softwood species of any consequence. In the hardwoods, tupelo, black, and sweetgum are the predominating species and together they make up 60 percent of the volume in hardwood sawtimber trees.

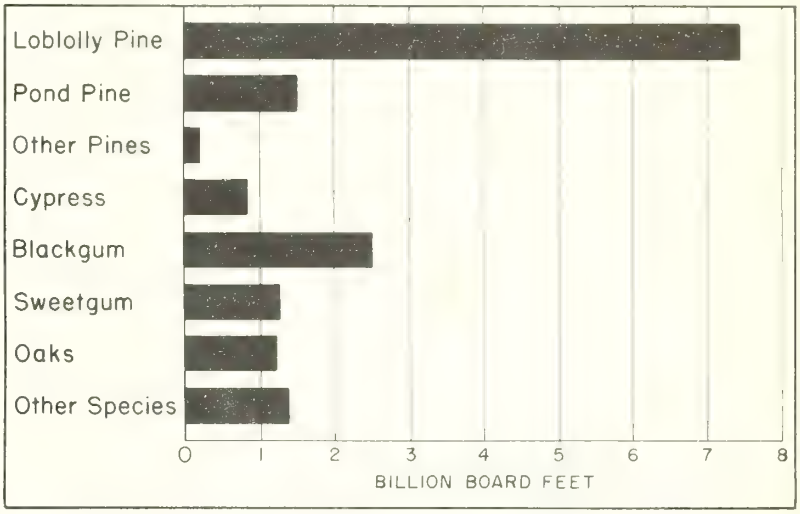

Figure 5.--Volume of sawtimber by species.

Nearly half of the available sawtimber is in trees which measure 12 and 14 inches in diameter at breast height, a point four and one-half feet above ground (fig. 6). More than 80 percent is in trees less than 19 inches in size. The proportion of hardwood volume in each diameter class increases with tree size. Starting at 35 percent in the 12-inch class, it runs to more than 60 percent in trees 22 inches and larger.

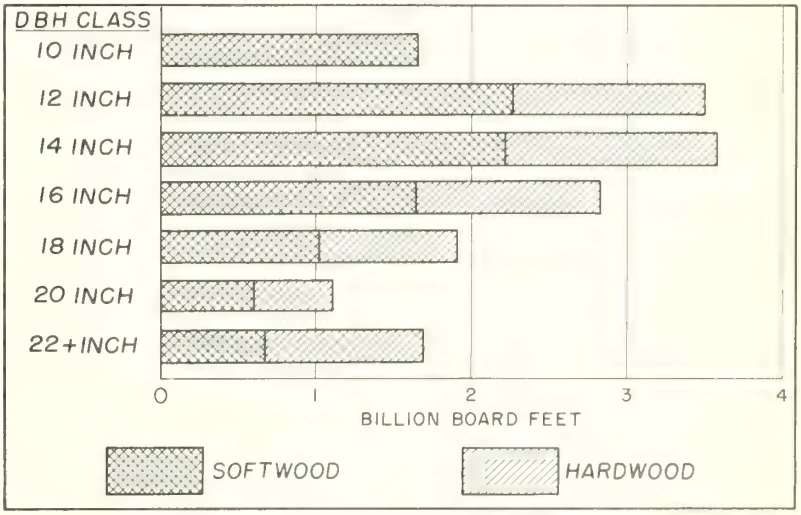

Figure 6.--Distribution of sawtimber volume by diameter class.

Growing stock up 8 percent.--Since 1937, the volume of growing stock has increased 8 percent. However, as table B indicates, the trends for the various species groups have differed widely. Pine volume is up slightly, hardwoods show a very substantial increase, and cypress and cedar suffered a heavy loss. The opposite trends in softwood species leave the total softwood volume practically unchanged since the original survey. The major increase is in hardwood species.

Growing stock is a term which includes all sound pole-size trees (starting at 5.0 inches in diameter) as well as the larger sawtimber trees. Volumes of solid wood, excluding bark, are computed in terms of cubic feet. Trees smaller than 5 inches in diameter are called seedlings or saplings, and they are not assigned volume for inventory purposes.

Table B.--Comparison of volume in all trees 5.0 inches d.b.h. and larger, 1937 to 1955

Species group	1937[1]	1955	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
GROWING STOCK				
Yellow pines	2,247	2,324	+ 77	+ 3
Cypress and cedar	287	224	- 63	- 22
Hardwoods	1,741	2,079	+338	+ 19
All species	4,275	4,627	+352	+ 8
CULL TREES				
Yellow pines	97	85	- 12	- 12
Cypress and cedar	13	27	+ 14	+108
Hardwoods[2]	456	702	+246	+ 54
All species	566	814	+248	+ 44

[1] See footnote 1, table A.

[2] Excludes limb volume of hardwood sawtimber trees.

The amount of material in cull trees, particularly hardwoods, also increased sharply. In both surveys tree quality was judged on the ability to produce merchantable saw logs either at the time of inventory or in the future. The cull tree volumes shown in table A are contained in trees too crooked, limby, or rotten to be cut into logs. However, they are not entirely worthless. Many of them can be used to produce fence posts, pulpwood, fuelwood, and other products where clear length, straightness, and soundness are not limiting factors. The increase in cull hardwood volume poses a difficult problem in forest management. These trees occupy valuable growing space which could be used for the production of higher grade material, yet, since they cannot pay their way, they are seldom removed from the stand in commercial saw-log operations.

Annual growth of growing stock totals 3.3 million cords; sawtimber growth 824 million board feet.--Forests in the Northern Coastal Plain are producing an annual volume of timber equal to 3.3 million cords of wood, including bark, or 227 million cubic feet of solid wood. This amount includes ingrowth and the growth which takes place on all sound trees 5.0 inches d.b.h. and larger. Yellow pines are producing at the rate of 1.8 million cords per year, or about 55 percent of the total growth of all species. Growth on sawtimber-size trees amounted to 824 million board feet, of which 68 percent was pine.

Estimates of volume growth are based on increment cores taken from thousands of sample trees throughout all counties in the unit. These cores are used to determine the rate of tree diameter growth. They also indicate the number of young trees which may be expected to grow into volume size during the course of a year, thus establishing the volume of ingrowth. Net growth is arrived at by subtracting timber mortality losses by insects, disease, fire, and other natural causes from the total growth estimate. Ingrowth from sapling trees makes up approximately 10 percent of the net growth in growing stock, and trees growing from pole to sawtimber size make up about one-fourth of the increase in board-foot volume.

In terms of growth per acre, stands of loblolly pine show the highest rate of production, with an average of 325 board feet, or 1.1 cords, per year. Stands in all forest types and conditions averaged 226 board feet, or 0.9 cord, per acre per year. These rates for Unit 2 are about one-third higher than those found in the Southern Coastal Plain, reflecting better stocking and site conditions. The average production of 423 board feet per acre per year in stands of loblolly pine sawtimber will probably be the highest rate found anywhere in North Carolina.

Timber supply is building up.--A comparison of growth with the amount of timber cut shows that timber volumes are gradually increasing (table C). Sawtimber cut for all purposes exceeded 500 million board feet, but the excess of growth over the amount cut left a gain of 268 million feet. A parallel trend was found in growing stock, where nearly half of the total amount of wood produced was left to build up the supply.

Table C.--Comparison of net annual growth and timber cut

Species group	Sawtimber			Growing stock		
	Growth	Cut	Change	Growth	Cut	Change
	Million board feet			Million cubic feet		
Yellow pines	563.4	398.4	+165.0	125.8	85.4	+ 40.4
Cypress and cedar	22.5	21.7	+ .8	5.1	5.2	- .1
Hardwoods	238.0	135.6	+102.4	96.2	34.1	+ 62.1
All species	823.9	555.7	+268.2	227.1	124.7	+102.4

This favorable trend was found in all species groups except cypress and whitecedar, which are relatively slow-growing species and which are still being cut heavily. The annual rate of increase on growing stock ranges from 1.7 percent for pine to 3.0 percent for the soft hardwood species.

In the previous discussion of stand structure it was pointed out that small hardwood trees are increasing in number more rapidly than pine. This trend also shows up in the volume change resulting from the interaction of growth, timber cutting, and mortality. The annual increase in hardwood sawtimber makes up only 38 percent of the gain in board-foot volume, but the increase in hardwood growing stock is 61 percent of the total. The tendency for hardwoods to increase can be expected to continue in the future unless the utilization of these species can be stimulated.

Table 1.--Gross area[1] by broad use class, 1955

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	4,140.4	46.6
Noncommercial:		
Productive-reserved	0.4	(2/)
Unproductive	261.4	2.9
Total forest	4,402.2	49.5
Nonforest land:		
Agriculture	1,929.5	21.7
Marsh	205.1	2.3
Urban and other[3]	208.4	2.4
Total nonforest	2,343.0	26.4
Total land area	6,745.2	75.9
Total water area[4]	2,145.7	24.1
All classes	8,890.9	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Less than 0.05 percent.

[3] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[4] Census water area reported in 1950 plus 3,200 acres of Census water created since 1950. Also includes 32,400 acres of water according to Survey standards but defined by the Bureau of Census as land area.

Table 2.--Ownership of commercial forest land, 1955

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	75.9	1.8
Indian	--	--
Other Federal	13.0	0.3
Total Federal	88.9	2.1
State	2.4	0.1
County and municipal	2.8	0.1
Total public	94.1	2.3
Private land:		
Farm	2,415.6	58.3
Other	1,630.7	39.4
Total private	4,046.3	97.7
All classes	4,140.4	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1955

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	2.2	14.9	23.7	14.3	--	55.1
Loblolly pine	318.8	655.6	282.6	131.8	20.7	1,409.5
Shortleaf pine	--	9.4	13.5	7.0	2.6	32.5
Pond pine	47.0	213.7	141.8	198.6	46.7	647.8
Total	368.0	893.6	461.6	351.7	70.0	2,144.9
Other types:						
Oak-pine	88.6	123.7	100.2	77.5	7.3	397.3
Oak-hickory:						
Upland hdwds.	57.9	63.8	41.8	33.5	--	197.0
Scrub oak	--	--	--	2.1	--	2.1
Oak-gum-cypress	465.6	358.7	278.2	238.3	58.3	1,399.1
Total	612.1	546.2	420.2	351.4	65.6	1,995.5
All types	980.1	1,439.8	881.8	703.1	135.6	4,140.4
Percent	23.6	34.8	21.3	17.0	3.3	100.0

[1] See description of forest types and stand-size classes under Definition of Terms.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, 1955

(In million board feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	20.7	69.2	18.5	5.5	0.6	114.5
Loblolly pine	2,913.0	4,065.5	334.6	108.8	10.5	7,432.4
Pond pine	228.9	1,037.3	119.9	86.2	15.9	1,488.2
Shortleaf pine	21.9	70.2	9.5	4.4	0.9	106.9
Total pine	3,184.5	5,242.2	482.5	204.9	27.9	9,142.0
Cypress	492.7	278.7	34.1	10.7	--	816.2
Cedar	37.9	73.4	6.5	--	--	117.8
Total sftwds.	3,715.1	5,594.3	523.1	215.6	27.9	10,076.0
Hardwoods:						
Bl. & tupelo gum	1,456.7	937.3	57.7	32.8	3.7	2,488.2
Sweetgum	797.0	402.1	81.1	10.5	0.7	1,291.4
Yellow-poplar	178.4	80.3	20.8	2.4	--	281.9
Soft maple	202.8	115.2	28.1	3.3	9.3	358.7
Other soft hdwds.	158.8	30.8	11.7	0.5	1.2	203.0
Total	2,793.7	1,565.7	199.4	49.5	14.9	4,623.2
White & swamp chestnut oaks	231.7	177.4	52.4	11.0	--	472.5
Other white oaks	54.7	36.0	10.4	11.8	--	112.9
No. red & swamp red oaks	147.6	32.0	1.8	1.8	--	183.2
Other red oaks	266.3	126.3	27.8	1.6	1.8	423.8
Hickory	40.7	29.4	12.3	3.9	--	86.3
Ash	151.8	26.3	2.8	0.8	--	181.7
Other hard hdwds.	78.6	37.0	13.0	5.9	--	134.5
Total	971.4	464.4	120.5	36.8	1.8	1,594.9
Total hdwds.	3,765.1	2,030.1	319.9	86.3	16.7	6,218.1
All species	7,480.2	7,624.4	843.0	301.9	44.6	16,294.1
Percent	45.9	46.8	5.2	1.8	0.3	100.0

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[1] Log scale, International 1/4-inch rule.

[2] See Definition of Terms for species combined with others.

Table 5.--Net volume[1] of sawtimber by species and diameter class, 1955

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	51.5	42.3	13.7	7.0	114.5	0.7
Loblolly pine	2,707.8	3,699.2	931.6	93.8	7,432.4	45.6
Pond pine	861.2	600.7	26.3	--	1,488.2	9.1
Shortleaf pine	64.5	42.4	--	--	106.9	0.7
Total pine	3,685.0	4,384.6	971.6	100.8	9,142.0	56.1
Cypress	185.0	460.2	135.2	35.8	816.2	5.0
Cedar	66.3	40.7	10.8	--	117.8	0.7
Total sftwds.	3,936.3	4,885.5	1,117.6	136.6	10,076.0	61.8
Hardwoods:						
Bl. & tupelo gum	509.6	1,438.5	384.3	155.8	2,488.2	15.3
Sweetgum	291.7	745.6	189.2	64.9	1,291.4	7.9
Yellow-poplar	61.9	186.8	25.8	7.4	281.9	1.7
Soft maple	67.4	217.6	66.7	7.0	358.7	2.2
Other soft hdwds.	30.0	102.4	70.6	--	203.0	1.3
Total	960.6	2,690.9	736.6	235.1	4,623.2	28.4
White & swamp chestnut oaks	91.9	221.6	85.2	73.8	472.5	2.9
Other white oaks	25.2	38.3	19.0	30.4	112.9	0.7
No. red & swamp red oaks	19.1	75.4	55.2	33.5	183.2	1.1
Other red oaks	60.7	202.4	92.7	68.0	423.8	2.6
Hickory	20.1	44.5	21.7	--	86.3	0.5
Ash	31.6	98.2	31.4	20.5	181.7	1.1
Other hard hdwds.	28.9	59.6	35.9	10.1	134.5	0.9
Total	277.5	740.0	341.1	236.3	1,594.9	9.8
Total hdwds.	1,238.1	3,430.9	1,077.7	471.4	6,218.1	38.2
All species	5,174.4	8,316.4	2,195.3	608.0	16,294.1	100.0
Percent	31.8	51.0	13.5	3.7	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1955

(In million board feet)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	25.4	52.6	16.2	1.3	--	95.5
Loblolly pine	2,808.8	4,025.2	271.8	70.9	8.8	7,185.5
Shortleaf pine	--	47.6	13.5	--	--	61.1
Pond pine	228.8	1,020.9	116.4	68.8	16.9	1,451.8
Total	3,063.0	5,146.3	417.9	141.0	25.7	8,793.9
Other types:						
Oak-pine	612.0	503.6	117.9	29.9	--	1,263.4
Oak-hickory:						
Upland hdwds.	299.1	213.9	43.5	22.3	--	578.8
Scrub oak	--	--	--	--	--	--
Oak-gum-cypress	3,506.1	1,760.6	263.7	108.7	18.9	5,658.0
Total	4,417.2	2,478.1	425.1	160.9	18.9	7,500.2
All types	7,480.2	7,624.4	843.0	301.9	44.6	16,294.1
Percent	45.9	46.8	5.2	1.8	0.3	100.0

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, 1955

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd. ft.	Percent	Million bd. ft.	Percent	Million bd. ft.	Percent
			PINE			
Grade 1	--	--	157.5	4.6	157.5	1.7
Grade 2	1,315.1	23.0	1,376.5	40.2	2,691.6	29.5
Grade 3	2,984.8	52.2	1,085.4	31.7	4,070.2	44.5
Grade 4	1,418.0	24.8	804.7	23.5	2,222.7	24.3
Total	5,717.9	100.0	3,424.1	100.0	9,142.0	100.0
			OTHER SOFTWOODS			
Grade 1	--	--	81.7	16.7	81.7	8.8
Grade 2	265.1	59.6	309.7	63.3	574.8	61.5
Grade 3	179.7	40.4	34.2	7.0	213.9	22.9
Grade 4	--	--	63.6	13.0	63.6	6.8
Total	444.8	100.0	489.2	100.0	934.0	100.0
			SOFT HARDWOODS			
Grade 1	--	--	444.0	17.3	444.0	9.6
Grade 2	292.0	14.2	590.3	23.0	882.3	19.1
Grade 3	890.5	43.3	672.5	26.2	1,563.0	33.8
Grade 4	874.0	42.5	859.9	33.5	1,733.9	37.5
Total	2,056.5	100.0	2,566.7	100.0	4,623.2	100.0
			HARD HARDWOODS			
Grade 1	--	--	99.3	9.4	99.3	6.2
Grade 2	--	--	329.6	31.2	329.6	20.7
Grade 3	156.1	29.0	255.7	24.2	411.8	25.8
Grade 4	382.3	71.0	371.9	35.2	754.2	47.3
Total	538.4	100.0	1,056.5	100.0	1,594.9	100.0

[1] Ten-inch hardwoods not included since they are below sawtimber size.

Table 8.--Net volume[1] of all timber by species and stand-size class, 1955

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	50	239	268	26	2	585
Loblolly pine	7,230	13,783	2,877	419	39	24,348
Pond pine	685	3,949	1,181	270	50	6,135
Shortleaf pine	59	275	89	15	4	442
Total pine	8,024	18,246	4,415	730	95	31,510
Cypress	1,101	760	105	30	--	1,996
Cedar	113	306	230	--	--	649
Total sftwds.	9,238	19,312	4,750	760	95	34,155
Hardwoods:						
Bl. & tupelo gum	5,034	4,263	651	111	13	10,072
Sweetgum	2,921	2,077	892	82	7	5,979
Yellow-poplar	632	413	145	26	--	1,216
Soft maple	974	813	429	14	50	2,280
Other soft hdwds.	609	283	233	2	4	1,131
Total	10,170	7,849	2,350	235	74	20,678
White & swamp chestnut oaks	880	866	275	37	--	2,058
Other white oaks	182	261	96	38	--	577
No. red & swamp red oaks	435	136	5	5	--	581
Other red oaks	958	662	249	45	6	1,920
Hickory	176	128	67	12	--	383
Ash	651	198	73	3	--	925
Dogwood, holly	158	144	103	4	--	409
Other hard hdwds.	227	149	81	14	--	471
Total	3,667	2,544	949	158	6	7,324
Total hdwds.	13,837	10,393	3,299	393	80	28,002
All species	23,075	29,705	8,049	1,153	175	62,157
Percent	37.1	47.8	12.9	1.9	0.3	100.0

OTHER MATERIAL

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Sound culls:						
Softwoods	303	510	276	215	67	1,371
Hardwoods	3,219	2,620	1,628	688	182	8,337
Rotten culls	601	415	258	65	4	1,343
Hardwood limbs	1,432	499	175	56	11	2,173
Total other material	5,555	4,044	2,337	1,024	264	13,224

Table 9.- Net volume[1] of all timber by species and diameter class, 1955

(In thousand cords)

GROWING STOCK

Species	Pole trees[2]		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	92	172	88	77	112	44	585
Loblolly pine	1,847	3,103	3,868	4,753	8,629	2,148	24,348
Pond pine	611	1,285	1,488	1,188	1,506	57	6,135
Shortleaf pine	81	47	124	81	109	--	442
Total pine	2,631	4,607	5,568	6,099	10,356	2,249	31,510
Cypress	59	121	200	342	966	308	1,996
Cedar	164	212	90	82	80	21	649
Total sftwds.	2,854	4,940	5,858	6,523	11,402	2,578	34,155
Hardwoods:							
Bl. & tupelo gum	641	996	1,477	1,665	4,030	1,263	10,072
Sweetgum	728	757	891	949	2,059	595	5,979
Yellow-poplar	83	152	189	198	516	78	1,216
Soft maple	289	393	523	263	636	176	2,280
Other soft hdwds.	166	153	230	118	295	169	1,131
Total	1,907	2,451	3,310	3,193	7,536	2,281	20,678
White & swamp chestnut oaks	199	228	211	333	677	410	2,058
Other white oaks	63	113	55	96	123	127	577
No. red & swamp red oaks	10	60	35	63	203	210	581
Other red oaks	158	257	268	222	604	411	1,920
Hickory	18	72	26	74	136	57	383
Ash	79	122	212	122	273	117	925
Dogwood, holly	98	148	73	43	47	--	409
Other hard hdwds.	14	69	68	62	139	119	471
Total	639	1,069	948	1,015	2,202	1,451	7,324
Total hdwds.	2,546	3,520	4,258	4,208	9,738	3,732	28,002
All species	5,400	8,460	10,116	10,731	21,140	6,310	62,157
Percent	8.7	13.6	16.3	17.3	34.0	10.1	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	274	248	235	168	279	167	1,371
Hardwoods	1,299	1,230	837	878	2,182	1,911	8,337
Rotten culls	46	111	88	108	329	661	1,343
Hardwood limbs	--	--	--	128	1,038	1,007	2,173
Total other material	1,619	1,589	1,160	1,282	3,828	3,746	13,224

1/ Sound wood and bark.

2/ Ten-inch hardwoods are classed as pole-size trees.

Table 10.--Net volume[1] of all timber by species and class of material, 1955

(In thousand cords)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Longleaf pine	232	89	264	585	20	2
Loblolly pine	14,939	4,459	4,950	24,348	565	10
Pond pine	3,273	966	1,896	6,135	581	5
Shortleaf pine	230	84	128	442	9	--
Total pine	18,674	5,598	7,238	31,510	1,175	17
Cypress	1,389	427	180	1,996	151	103
Cedar	248	25	376	649	45	5
Total sftwds.	20,311	6,050	7,794	34,155	1,371	125
Hardwoods:						
Bl. & tupelo gum	5,268	1,690	3,114	10,072	3,326	644
Sweetgum	2,709	894	2,376	5,979	1,195	134
Yellow-poplar	577	215	424	1,216	142	10
Soft maple	700	375	1,205	2,280	1,784	305
Other soft hdwds.	390	192	549	1,131	673	59
Total	9,644	3,366	7,668	20,678	7,120	1,152
White & swamp chestnut oaks	933	487	638	2,058	577	26
Other white oaks	226	120	231	577	280	7
No. red & swamp red oaks	356	120	105	581	168	3
Other red oaks	829	408	683	1,920	946	41
Hickory	172	95	116	383	136	9
Ash	376	136	413	925	273	43
Dogwood, holly	52	38	319	409	183	14
Scrub oak[3]	--	--	--	--	345	28
Other hard hdwds.	208	112	151	471	340	37
Total	3,152	1,516	2,656	7,324	3,248	208
Total hdwds.	12,796	4,882	10,324	28,002	10,368	1,360
All species	33,107	10,932	18,118	62,157	11,739	1,485
Percent	53.3	17.6	29.1	100.0	88.8	11.2

[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, 1955

(In thousand cords)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
GROWING STOCK						
Pine types:						
Longleaf pine	66	191	259	14	--	530
Loblolly pine	7,810	14,502	2,737	294	35	25,378
Shortleaf pine	--	160	89	--	--	249
Pond pine	678	3,905	1,188	215	53	6,039
Total	8,554	18,758	4,273	523	88	32,196
Other types:						
Oak-pine	1,922	2,258	688	151	--	5,019
Oak-hickory:						
Upland hdwds.	995	996	295	76	--	2,362
Scrub oak	--	--	--	--	--	--
Oak-gum-cypress	11,604	7,693	2,793	403	87	22,580
Total	14,521	10,947	3,776	630	87	29,961
All types	23,075	29,705	8,049	1,153	175	62,157
Percent	37.1	47.8	12.9	1.9	0.3	100.0
OTHER MATERIAL						
Pine types:						
Longleaf pine	25	12	--	--	--	37
Loblolly pine	761	950	342	133	5	2,191
Shortleaf pine	--	6	9	12	--	27
Pond pine	80	202	116	133	62	593
Total	866	1,170	467	278	67	2,848
Other types:						
Oak-pine	355	439	216	98	2	1,110
Oak-hickory:						
Upland hdwds.	324	164	113	61	--	662
Scrub oak	--	--	--	--	--	--
Oak-gum-cypress	4,010	2,271	1,541	587	195	8,604
Total	4,689	2,874	1,870	746	197	10,376
All types	5,555	4,044	2,337	1,024	264	13,224
Percent	42.0	30.6	17.7	7.7	2.0	100.0

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1955

(In million cubic feet)

GROWING STOCK

Species	Pole trees[2]		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	5.2	11.7	5.3	6.1	8.5	3.8	40.6
Loblolly pine	107.1	208.3	274.8	344.6	697.3	182.2	1,814.3
Pond pine	36.3	86.4	96.9	94.7	119.2	4.8	438.3
Shortleaf pine	5.0	3.1	8.5	6.0	8.4	--	31.0
Total pine	153.6	309.5	385.5	451.4	833.4	190.8	2,324.2
Cypress	4.0	9.0	15.4	27.8	87.1	29.0	172.3
Cedar	11.2	15.8	8.1	7.3	7.7	1.9	52.0
Total sftwds.	168.8	334.3	409.0	486.5	928.2	221.7	2,548.5
Hardwoods:							
Bl. & tupelo gum	36.7	66.0	106.3	125.7	313.9	105.3	753.9
Sweetgum	40.5	49.5	64.4	71.9	161.3	49.6	437.2
Yellow-poplar	4.7	10.2	13.6	15.2	40.4	6.5	90.6
Soft maple	16.5	25.6	37.7	20.8	51.9	14.6	167.1
Other soft hdwds.	9.1	9.9	16.5	9.2	24.1	14.1	82.9
Total	107.5	161.2	238.5	242.8	591.6	190.1	1,531.7
White & swamp chestnut oaks	11.5	15.1	15.2	25.6	53.0	33.8	154.2
Other white oaks	3.8	7.3	4.0	7.0	9.4	10.5	42.0
No. red & swamp red oaks	0.5	3.9	2.5	5.0	16.2	17.6	45.7
Other red oaks	9.2	17.0	19.4	16.9	47.9	34.1	144.5
Hickory	1.1	4.8	1.9	5.6	10.7	4.6	28.7
Ash	4.6	7.9	15.4	9.0	21.8	9.6	68.3
Dogwood, holly	5.8	9.8	5.2	3.3	3.6	--	27.7
Other hard hdwds.	0.8	4.5	5.0	4.7	10.7	9.8	35.5
Total	37.3	70.3	68.6	77.1	173.3	120.0	546.6
Total hdwds.	144.8	231.5	307.1	319.9	764.9	310.1	2,078.3
All species	313.6	565.8	716.1	806.4	1,693.1	531.8	4,626.8
Percent	6.8	12.2	15.5	17.4	36.6	11.5	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	15.6	16.5	17.0	13.3	23.0	14.8	100.2
Hardwoods	75.0	80.8	60.0	64.0	172.2	158.3	610.3
Rotten culls	2.8	7.1	6.4	5.4	25.5	56.3	103.5
Hardwood limbs	--	--	--	7.2	76.1	78.2	161.5
Total other material	93.4	104.4	83.4	89.9	296.8	307.6	975.5

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[1] Excluding bark.

[2] Ten-inch hardwoods are classed as pole-size trees.

Table 13.--Net volume[1] of all timber by species and class of material, 1955

(In million cubic feet)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Longleaf pine	18.6	5.1	16.9	40.6	1.6	0.1
Loblolly pine	1,214.0	284.9	315.4	1,814.3	41.5	0.8
Pond pine	248.9	66.7	122.7	438.3	39.9	0.4
Shortleaf pine	18.1	4.8	8.1	31.0	0.6	--
Total pine	1,499.6	361.5	463.1	2,324.2	83.6	1.3
Cypress	127.7	31.6	13.0	172.3	13.3	10.2
Cedar	20.0	5.0	27.0	52.0	3.3	0.4
Total sftwds.	1,647.3	398.1	503.1	2,548.5	100.2	11.9
Hardwoods:						
Bl. & tupelo gum	413.3	131.6	209.0	753.9	251.3	51.8
Sweetgum	214.9	67.9	154.4	437.2	85.4	10.8
Yellow-poplar	47.1	15.0	28.5	90.6	10.1	0.6
Soft maple	57.8	29.5	79.8	167.1	126.9	24.0
Other soft hdwds.	32.2	15.2	35.5	82.9	46.3	4.7
Total	765.3	259.2	507.2	1,531.7	520.0	91.9
White & swamp chestnut oaks	76.3	36.1	41.8	154.2	43.0	1.8
Other white oaks	18.2	8.7	15.1	42.0	20.3	0.4
No. red & swamp red oaks	28.7	10.1	6.9	45.7	13.4	0.3
Other red oaks	67.6	31.3	45.6	144.5	71.0	3.1
Hickory	14.2	6.7	7.8	28.7	10.0	0.7
Ash	29.6	10.8	27.9	68.3	19.3	3.3
Dogwood, holly	4.6	2.3	20.8	27.7	12.5	0.9
Scrub oak[3]	--	--	--	--	21.6	1.8
Other hard hdwds.	17.3	7.9	10.3	35.5	25.2	2.9
Total	256.5	113.9	176.2	546.6	236.3	15.2
Total hdwds.	1,021.8	373.1	683.4	2,078.3	756.3	107.1
All species	2,669.1	771.2	1,186.5	4,626.8	856.5	119.0
Percent	57.7	16.7	25.6	100.0	87.8	12.2

[1] Excluding bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, 1955

(In board feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	2,930	3,464	685	92	1,611
Hardwood	2,700	48	--	--	122
Loblolly pine					
Softwood	7,910	5,752	834	452	4,681
Hardwood	899	389	128	71	417
Shortleaf pine					
Softwood	--	4,495	618	--	1,557
Hardwood	--	557	376	--	317
Pond pine					
Softwood	4,869	4,755	821	349	2,234
Hardwood	--	23	--	--	8
Oak-pine					
Softwood	3,225	1,978	740	269	1,579
Hardwood	3,679	2,095	436	84	1,601
Upland hdwds.					
Softwood	348	559	84	292	351
Hardwood	4,816	2,796	956	375	2,587
Oak-gum-cypress					
Softwood	1,372	1,208	247	186	855
Hardwood	6,159	3,699	701	245	3,189
All types					
Softwood	3,790	3,885	593	290	2,434
Hardwood	3,842	1,410	363	123	1,502

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1955

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[3]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	18.9	4.6	12.4	0.1	10.9	--	1.0	--	9.1	0.2
Hardwood	11.5	6.9	0.3	0.7	--	--	--	--	0.5	0.5
Loblolly pine										
Softwood	19.8	0.4	19.3	0.3	8.7	0.4	1.9	0.4	15.4	0.4
Hardwood	4.7	2.0	2.8	1.1	0.9	0.8	0.2	0.5	2.6	1.2
Shortleaf pine										
Softwood	--	--	15.4	--	5.4	0.2	--	--	6.7	0.1
Hardwood	--	--	1.6	0.6	1.2	0.4	--	1.2	1.0	0.7
Pond pine										
Softwood	13.8	1.5	18.0	0.9	8.4	0.8	1.1	0.8	9.2	0.9
Hardwood	0.6	0.2	0.2	0.1	--	--	--	(4/)	0.1	(4/)
Oak-pine										
Softwood	7.7	0.1	7.0	0.3	3.1	0.1	1.1	0.1	4.9	0.2
Hardwood	14.0	3.9	11.3	3.2	3.8	2.0	0.7	1.1	7.7	2.6
Upland hdwds.										
Softwood	1.3	--	2.3	(4/)	0.7	0.1	0.7	--	1.4	(4/)
Hardwood	15.9	5.6	13.3	2.5	6.3	2.6	1.5	1.8	10.6	3.3
Oak-gum-cypress										
Softwood	3.2	0.4	4.0	0.2	1.5	0.1	0.5	0.1	2.5	0.2
Hardwood	21.7	8.2	17.4	6.1	8.5	5.4	1.1	2.5	13.6	5.9
All types										
Softwood	9.4	0.4	13.4	0.4	5.4	0.3	1.0	0.3	8.2	0.4
Hardwood	14.1	5.3	7.2	2.4	3.7	2.3	0.6	1.2	6.8	2.8

1/ Sound wood and bark.

2/ Sound trees.

3/ Cull trees.

4/ Less than 0.05 cord per acre.

Table 16.--Number of trees[1] by species group, quality class, and tree size, 1955

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	378,951	112,444	66,469	11,625	569,489
Sound culls	(2/)	9,997	2,398	510	12,905
Rotten culls	(2/)	87	41	49	177
Total	378,951	122,528	68,908	12,184	582,571
Other softwoods:					
Sound trees	39,732	10,106	4,458	1,498	55,794
Sound culls	(2/)	866	535	154	1,555
Rotten culls	(2/)	97	108	176	381
Total	39,732	11,069	5,101	1,828	57,730
Soft hardwoods:					
Sound trees	514,205	103,248	23,222	10,686	651,361
Sound culls	(2/)	40,394	6,339	4,416	51,149
Rotten culls	(2/)	6,553	1,954	3,216	11,723
Total	514,205	150,195	31,515	18,318	714,233
Hard hardwoods:					
Sound trees	247,138	41,719	7,869	4,603	301,329
Sound culls	(2/)	25,098	2,219	1,420	28,737
Rotten culls	(2/)	4,176	451	330	4,957
Total	247,138	70,993	10,539	6,353	335,023
All species	1,180,026	354,785	116,063	38,683	1,689,557

[1] All trees 1.0 inch d.b.h. and larger.

[2] Data not collected.

Table 17.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1955

(In thousand acres)

Forest type	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
Longleaf pine	10.9	3.4	--	14.3
Loblolly pine	139.5	4.6	8.4	152.5
Shortleaf pine	4.8	--	4.8	9.6
Pond pine	211.6	3.4	2.1	217.1
Oak-pine	70.0	3.3	--	73.3
Upland hdwds.	33.5	--	--	33.5
Scrub oak	--	--	2.1	2.1
All types	470.3	14.7	17.4	502.4
Percent	93.6	2.9	3.5	100.0

[1] Excludes entire area of oak-gum-cypress type, and 40 thousand acres of other types on which planting would be impractical because of dense brush cover.

[2] Sufficient seed trees present or area is restocking naturally.

Table 18.--Stocking on commercial forest area by forest type and tree-size class, 1955

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Longleaf pine	--	16.2	20.4	18.5	55.1
Loblolly pine	14.1	135.8	259.1	1,000.5	1,409.5
Shortleaf pine	2.6	2.2	9.5	18.2	32.5
Pond pine	44.5	197.4	184.6	221.3	647.8
Oak-pine	9.2	45.7	108.4	234.0	397.3
Upland hdwds.	--	29.1	45.6	122.3	197.0
Scrub oak	--	2.1	--	--	2.1
Oak-gum-cypress	56.1	300.7	404.6	637.7	1,399.1
All types	126.5	729.2	1,032.2	2,252.5	4,140.4
Percent	3.1	17.6	24.9	54.4	100.0
SAWTIMBER GROWING STOCK					
Longleaf pine	28.5	22.4	4.2	--	55.1
Loblolly pine	261.0	543.1	353.4	252.0	1,409.5
Shortleaf pine	16.0	7.1	9.4	--	32.5
Pond pine	280.0	235.2	81.0	51.6	647.8
Oak-pine	116.3	186.9	62.9	31.2	397.3
Upland hdwds.	41.1	108.6	34.9	12.4	197.0
Scrub oak	2.1	--	--	--	2.1
Oak-gum-cypress	391.9	547.5	295.7	164.0	1,399.1
All types	1,136.9	1,650.8	841.5	511.2	4,140.4
Percent	27.5	39.9	20.3	12.3	100.0

Table 19.--Net annual growth by species group and unit of of measure, 1955

Species group	Sawtimber	Growing stock	
	Million bd. ft.	Million cu. ft.	Thousand cords
So. yellow pines	563.4	125.8	1,842
Other softwoods	22.5	5.1	69
Soft hardwoods	176.6	70.9	1,059
Hard hardwoods	61.4	25.3	370
All species	823.9	227.1	3,340

Table 20.--Net annual growth percentages for each species group and unit of measure, 1955

Unit of measure	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board feet	6.16	2.41	3.82	3.85	5.06
Cubic feet	5.41	2.28	4.63	4.62	4.91
Standard cords	5.85	2.61	5.12	5.05	5.37

Table 21.--Average growth of sawtimber per acre by forest type and stand-size class, 1955

(In board feet)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf pine	302	127	17	153
Loblolly pine	423	144	40	325
Shortleaf pine	273	75	--	110
Pond pine	313	85	22	153
Oak-pine	283	154	21	195
Oak-hickory	214	103	31	159
Oak-gum-cypress	270	88	29	183
All types	335	114	28	226

Table 22.--Average growth of growing stock per acre by forest type and stand-size class, 1955

(In standard cords)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf pine	0.8	1.0	0.1	0.7
Loblolly pine	1.3	1.2	0.2	1.1
Shortleaf pine	0.8	0.7	--	0.5
Pond pine	0.9	0.6	0.1	0.5
Oak-pine	1.1	0.6	0.1	0.8
Oak-hickory	0.9	0.5	0.1	0.7
Oak-gum-cypress	1.1	1.0	0.1	0.9
All types	1.1	0.9	0.1	0.9
(In cubic feet)				
Longleaf pine	62.3	64.2	6.9	48.7
Loblolly pine	94.0	77.3	15.2	82.2
Shortleaf pine	59.0	50.0	--	37.8
Pond pine	65.8	42.1	5.6	37.8
Oak-pine	82.0	41.4	8.8	56.2
Oak-hickory	65.4	34.5	7.8	49.1
Oak-gum-cypress	83.7	68.9	7.5	64.6
All types	84.6	62.1	8.4	64.4

Table 23.--Average annual drain on sawtimber by tree-size class and species group

(In million board feet)

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
Small sawtimber	232.8	11.1	15.6	9.4	268.9
Large sawtimber	165.6	10.6	86.0	24.6	286.8
All trees	398.4	21.7	101.6	34.0	555.7

Table 24.--Average annual drain on growing stock by tree-size class and species group

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
	(In thousand cords)				
Pole trees	85	15	61	29	190
Small sawtimber	660	27	50	32	769
Large sawtimber	371	19	208	63	661
All trees	1,116	61	319	124	1,620
	(In million cubic feet)				
Pole trees	5.6	1.1	3.8	1.8	12.3
Small sawtimber	49.3	2.2	3.8	2.5	57.8
Large sawtimber	30.5	1.9	17.1	5.1	54.6
All trees	85.4	5.2	24.7	9.4	124.7

Table 25.--Net annual change in sawtimber volume by species group

(In million board feet)

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1	9,142.0	934.0	4,623.2	1,594.9	16,294.1
Total growth	603.6	32.2	211.3	73.2	920.3
Mortality	40.2	9.7	34.7	11.8	96.4
Net growth	563.4	22.5	176.6	61.4	823.9
Timber cut	398.4	21.7	101.6	34.0	555.7
Loss or gain	+165.0	+0.8	+75.0	+27.4	+268.2
Net volume, Dec. 31	9,307.0	934.8	4,698.2	1,622.3	16,562.3
Percent change	+1.8	+0.1	+1.6	+1.7	+1.6

Table 26.--Net annual change in growing stock by species group

(In thousand cords)

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1	31,510	2,645	20,678	7,324	62,157
Total growth	2,081	108	1,215	423	3,827
Mortality	239	39	156	53	487
Net growth	1,842	69	1,059	370	3,340
Timber cut	1,116	61	319	124	1,620
Loss or gain	+726	+8	+740	+246	+1,720
Net volume, Dec. 31	32,236	2,653	21,418	7,570	63,877
Percent change	+2.3	+0.3	+3.6	+3.4	+2.8
(In million cubic feet)					
Net volume, Jan. 1	2,324.2	224.3	1,531.7	546.6	4,626.8
Total growth	142.3	8.3	82.6	29.3	262.5
Mortality	16.5	3.2	11.7	4.0	35.4
Net growth	125.8	5.1	70.9	25.3	227.1
Timber cut	85.4	5.2	24.7	9.4	124.7
Loss or gain	+40.4	-0.1	+46.2	+15.9	+102.4
Net volume, Dec. 31	2,364.6	224.2	1,577.9	562.5	4,729.2
Percent change	+1.7	0.0	+3.0	+2.9	+2.2

Table 27.--County area by broad use class, 1955

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Beaufort	612.5	187.6	84.5	--	340.4	64.5
Bertie	461.4	132.1	20.6	--	308.7	70.0
Camden	197.1	47.0	45.0	--	105.1	69.1
Carteret	680.3	104.5	342.5	31.1	202.2	59.9
Chowan	149.8	48.5	35.1	--	66.2	57.7
Craven	502.4	107.9	40.8	23.9	329.8	71.4
Currituck	300.2	72.9	128.1	1.1	98.1	57.0
Dare	797.4	50.1	550.5	38.6	158.2	64.1
Edgecombe	327.0	159.9	0.6	--	166.5	51.0
Gates	223.4	60.0	4.6	--	158.8	72.6
Halifax	463.4	184.9	5.2	--	273.3	59.6
Hertford	231.0	74.0	4.4	--	152.6	67.3
Hyde	873.0	103.9	470.6	109.8	188.7	46.9
Martin	308.5	102.2	1.6	--	204.7	66.7
Nash	353.3	172.3	0.6	--	180.4	51.1
Northampton	348.2	139.8	4.3	--	204.1	59.3
Pamlico	368.6	63.7	152.4	21.8	130.7	60.5
Pasquotank	185.6	60.3	39.2	--	86.1	58.8
Perquimans	207.4	64.0	41.1	--	102.3	61.5
Pitt	419.8	199.7	0.9	--	219.2	52.3
Tyrrell	373.1	19.1	118.6	7.1	228.3	89.7
Washington	268.8	67.0	54.0	28.4	119.4	55.6
Wilson	238.7	121.6	0.5	--	116.6	49.0
Unit total	8,890.9	2,343.0	2,145.7	261.8	4,140.4	61.4

[1] Gross area from Bureau of the Census, 1950.

Table 28.--Ownership of commercial forest land by county, 1955

County	Private		Public					
			National forest	Other Federal	State	County city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Beaufort	340.3	100.0	--	--	--	0.1	0.1	(1/)
Bertie	308.3	99.9	--	--	0.3	0.1	0.4	0.1
Camden	105.0	99.9	--	0.1	--	--	0.1	0.1
Carteret	162.9	80.6	38.4	0.9	--	--	39.3	19.4
Chowan	65.8	99.4	--	0.3	--	0.1	0.4	0.6
Craven	285.6	86.6	37.5	6.5	0.1	0.1	44.2	13.4
Currituck	95.9	97.8	--	1.3	0.8	0.1	2.2	2.2
Dare	158.2	100.0	--	--	--	--	--	--
Edgecombe	166.2	99.8	--	--	0.3	(1/)	0.3	0.2
Gates	158.8	100.0	--	--	--	--	--	--
Halifax	272.8	99.8	--	--	0.4	0.1	0.5	0.2
Hertford	152.6	100.0	--	--	(1/)	--	(1/)	--
Hyde	185.6	98.4	--	3.1	--	--	3.1	1.6
Martin	204.5	99.9	--	--	--	0.2	0.2	0.1
Nash	180.3	99.9	--	--	(1/)	0.1	0.1	0.1
Northampton	204.1	100.0	--	--	(1/)	(1/)	(1/)	--
Pamlico	130.2	99.6	--	0.5	--	--	0.5	0.4
Pasquotank	85.5	99.3	--	0.2	(1/)	0.4	0.6	0.7
Perquimans	101.5	99.2	--	--	(1/)	0.8	0.8	0.8
Pitt	218.8	99.8	--	--	(1/)	0.4	0.4	0.2
Tyrrell	228.2	100.0	--	0.1	--	--	0.1	(1/)
Washington	119.0	99.7	--	--	0.4	(1/)	0.4	0.3
Wilson	116.2	99.7	--	--	0.1	0.3	0.4	0.3
Unit total	4,046.3	97.7	75.9	13.0	2.4	2.8	94.1	2.3

1/ Less than 50 acres, or 0.05 percent.

Table 29.--Net volume[1] of sawtimber by county and species group, 1955

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Oaks and other hard hardwoods	All species
Beaufort	888.2	275.9	81.2	1,245.3
Bertie	842.3	529.7	235.9	1,607.9
Camden	195.6	165.9	7.3	368.8
Carteret	345.0	56.1	4.5	405.6
Chowan	193.1	44.2	51.2	288.5
Craven	645.4	251.2	77.9	974.5
Currituck	311.6	144.0	31.0	486.6
Dare	304.1	127.5	0.2	431.8
Edgecombe	359.8	213.6	78.0	651.4
Gates	490.0	191.3	70.2	751.5
Halifax	372.7	333.2	122.4	828.3
Hertford	419.2	260.4	138.0	817.6
Hyde	466.6	209.7	34.0	710.3
Martin	555.0	323.7	97.8	976.5
Nash	469.9	130.0	97.3	697.2
Northampton	389.4	262.1	154.5	806.0
Pamlico	312.6	102.1	40.5	455.2
Pasquotank	277.1	101.8	32.3	411.2
Perquimans	228.6	141.8	79.2	449.6
Pitt	562.5	289.5	71.3	923.3
Tyrrell	766.7	180.9	9.3	956.9
Washington	257.9	135.2	48.1	441.2
Wilson	422.7	153.4	32.8	608.9
Unit total	10,076.0	4,623.2	1,594.9	16,294.1

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft hardwoods.

Table 30.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group, 1955

(In million board feet)

County	Softwoods			Hardwoods		
	9-14 inches	15-19 inches	20+ inches	11-14 inches	15-19 inches	20+ inches
Beaufort	502.3	273.1	112.8	142.2	140.0	74.9
Bertie	405.[illegible]	[illegible]35.[illegible]	110.[illegible]	285.9	283.6	196.1
Camden	110.2	65.7	19.7	82.6	48.3	42.3
Carteret	255.0	7[illegible]	10.8	46.6	14.0	--
Chowan	111.9	59.1	22.1	42.3	30.5	22.6
Craven	422.9	154.0	68.5	146.4	127.3	55.4
Currituck	173.3	80.7	57.6	98.0	49.1	27.9
Dare	188.2	73.9	42.0	88.6	31.4	7.7
Edgecombe	213.1	103.0	43.7	89.2	118.9	83.5
Gates	307.5	127.0	55.5	109.6	80.9	71.0
Halifax	271.9	64.8	36.0	152.7	145.0	157.9
Hertford	282.0	78.4	58.8	161.6	126.4	110.4
Hyde	273.2	135.7	57.7	127.5	82.5	33.7
Martin	341.9	150.0	63.1	120.0	117.2	184.3
Nash	235.8	132.0	102.1	87.3	74.1	65.9
Northampton	220.4	79.0	90.0	178.5	134.7	103.4
Pamlico	251.[illegible]	56.4	4.3	61.3	64.6	16.7
Pasquotank	123.5	125.8	27.8	70.1	31.0	33.0
Perquimans	128.3	65.7	34.6	104.3	65.3	51.4
Pitt	333.1	145.[illegible]	33.9	137.2	140.9	82.7
Tyrrell	521.1	195.3	[illegible]0.3	93.8	58.4	38.0
Washington	183.5	66.0	[illegible]	100.7	47.8	34.8
Wilson	216.2	112.9	93.6	68.5	62.3	55.4
Unit total	6,162.7	2,659.1	1,254.2	2,594.9	2,074.2	1,549.0

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[1] Log scale, International 1/4-inch rule.

Table 31.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1955

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Beaufort	1,599	1,169	62	126	505	584	245	172	4,462
Bertie	1,371	1,013	55	167	1,104	1,191	400	556	5,857
Camden	294	305	141	24	397	334	61	16	1,572
Carteret	1,200	389	30	16	150	128	30	11	1,954
Chowan	281	279	7	--	161	86	74	119	1,007
Craven	1,390	784	64	65	520	555	202	190	3,770
Currituck	430	401	16	61	588	252	150	65	1,963
Dare	738	257	158	76	543	219	4	--	1,995
Edgecombe	720	506	16	27	262	505	150	187	2,373
Gates	992	579	109	96	554	410	178	158	3,076
Halifax	1,133	452	4	20	734	695	392	293	3,723
Hertford	863	479	43	53	386	563	275	276	2,938
Hyde	628	583	69	99	683	399	123	83	2,667
Martin	994	620	28	119	492	748	171	238	3,410
Nash	889	638	15	31	317	297	277	226	2,690
Northampton	695	354	56	176	452	576	209	369	2,887
Pamlico	893	323	3	10	330	200	74	108	1,941
Pasquotank	262	437	129	36	314	217	42	64	1,501
Perquimans	298	310	28	35	357	311	212	168	1,719
Pitt	712	745	31	70	658	617	173	163	3,169
Tyrrell	1,466	951	183	46	672	368	19	18	3,723
Washington	476	347	20	22	325	240	96	106	1,632
Wilson	581	684	3	--	357	322	114	67	2,128
Unit total	18,905	12,605	1,270	1,375	10,861	9,817	3,671	3,653	62,157

OTHER MATERIAL

County	Yellow pines 5 - 12 inches	Yellow pines 13+ inches	Other softwoods 5 - 12 inches	Other softwoods 13+ inches	Soft hardwoods 5 - 12 inches	Soft hardwoods 13+ inches	Hard hardwoods 5 - 12 inches	Hard hardwoods 13+ inches	All species
Beaufort	39	3	1	8	205	210	54	97	617
Bertie	97	41	9	11	391	879	212	274	1,914
Camden	4	4	9	12	154	168	33	16	400
Carteret	56	--	3	4	43	13	24	15	158
Chowan	14	2	--	--	84	109	27	65	301
Craven	60	60	1	--	128	236	95	134	714
Currituck	--	18	--	--	73	137	37	27	292
Dare	82	17	5	13	147	62	36	2	364
Edgecombe	23	24	3	3	69	365	103	104	694
Gates	16	20	7	59	102	291	47	51	593
Halifax	57	29	--	9	95	336	137	203	866
Hertford	12	11	12	49	79	202	105	129	599
Hyde	44	10	7	9	152	121	97	25	465
Martin	32	13	2	7	153	508	46	87	848
Nash	17	21	--	--	75	74	93	87	367
Northampton	68	5	5	3	260	216	63	168	788
Pamlico	21	3	--	--	77	61	29	40	231
Pasquotank	--	6	3	--	114	217	27	20	387
Perquimans	3	6	--	--	101	58	33	66	267
Pitt	26	19	8	--	170	248	104	176	751
Tyrrell	123	36	29	3	206	242	80	20	739
Washington	11	15	7	3	175	251	36	44	542
Wilson	17	7	--	--	97	118	49	39	327
Unit total	822	370	111	193	3,150	5,122	1,567	1,889	13,224

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[1] Sound wood and bark.

Table 32.--Average annual sawtimber drain by county and species group[1]

(In million board feet)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Beaufort	28.9	--	4.7	1.7	35.3
Bertie	52.4	1.8	13.8	1.9	69.9
Camden, Chowan, & Pasquotank	4.5	1.3	5.8	3.1	14.7
Carteret	15.4	--	1.0	--	16.4
Craven	16.8	--	4.6	0.4	21.8
Currituck	8.7	0.7	--	--	9.4
Dare	3.5	0.1	--	--	3.6
Edgecombe	17.2	3.5	7.3	--	28.0
Gates	9.2	--	7.6	4.0	20.8
Halifax	36.1	3.3	7.5	10.4	57.3
Hertford	13.7	--	3.8	1.5	19.0
Hyde	42.4	1.9	9.2	--	53.5
Martin	34.0	1.7	9.3	--	45.0
Nash	17.7	--	1.8	0.6	20.1
Northampton	14.3	0.9	1.4	6.2	22.8
Pamlico	11.6	--	2.7	--	14.3
Perquimans	9.7	--	2.2	0.8	12.7
Pitt	40.4	1.0	18.2	--	59.6
Tyrrell	6.1	4.0	--	--	10.1
Washington	3.6	1.5	0.7	3.2	9.0
Wilson	12.2	--	--	0.2	12.4
Unit total	398.4	21.7	101.6	34.0	555.7

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 33.--Average annual drain on growing stock by county and species group[1/]

(In thousand cords)

County	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Beaufort	83	4	16	9	112
Bertie	142	5	45	12	204
Camden, Chowan, & Pasquotank	14	3	21	10	48
Carteret	45	--	6	1	52
Craven	56	--	19	4	79
Currituck	21	2	--	--	23
Dare	9	--	--	--	9
Edgecombe	41	8	21	--	70
Gates	24	--	19	11	54
Halifax	101	6	19	28	154
Hertford	41	3	12	7	63
Hyde	120	5	25	1	151
Martin	85	4	24	--	113
Nash	51	2	7	5	65
Northampton	41	2	3	18	64
Pamlico	33	--	7	--	40
Perquimans	28	2	7	3	40
Pitt	120	2	59	4	185
Tyrrell	20	9	--	--	29
Washington	9	4	9	10	32
Wilson	32	--	--	1	33
Unit total	1,116	61	319	124	1,620

1/ Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

> Pine types: Forests in which 50 percent or more of the stand is in pine species. Plurality of volume or number of trees is used to determine the specific type.
>
> Oak-pine type: Forests in which 50 percent or more of the stand is hardwoods, usually upland oaks, but in which southern yellow pines make up 25-49 percent of the stand.

Oak-hickory type:

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, elm, maple, in mixture with cypress and other associated species, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Poletimber: Stands failing to meet the minimim sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber. To be merchantable all saw logs must be at least 8 feet long and at least 50 percent sound. They must also meet the following requirements:

Softwood logs[1] must have a scaling diameter of 6 inches or larger, and sweep or crook must not exceed two-thirds of the scaling diameter.

Hardwood logs must have a scaling diameter of 8 inches or larger and must pass specifications[2] for standard lumber logs, or tie and timber logs.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber-size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes longleaf, slash, loblolly, pond, Virginia, and shortleaf pine.

Other softwoods: Cypress, eastern redcedar, and Atlantic whitecedar.

Soft hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, willow, sweetbay, sycamore, and hackberry.

Hard hardwoods: All of the oaks, hickories, ash, beech, river birch, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

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[1] For detailed specifications of log grades, see "Interim log grades for southern pine". Southern Forest Experiment Station, 18 pp. 1953.

[2] For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results". U. S. Forest Products Laboratory, D1737, 1949.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, which are at least 4.0 inches in diameter inside bark, is shown separately for all sawtimber-size hardwoods.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The estimated volume of net growth includes the growth on the present growing stock, the growth on trees which died or were cut during the year, and the ingrowth resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on growth of sound trees. Growth of "other material" is not included.

In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1955 survey provided an estimate of the total forest area in the State with a standard error of ±0.7 percent. The probabilities are two out of three that the actual forest area is within ±0.7 percent of the estimated acreage. The standard error per million acres was ±1.5 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±2.1 percent, or ±4.5 percent per billion cubic feet. Here again, the probabilities are two out of three that the actual volume does not vary from the estimated volume by more than this percentage. The error of the volume in standard cords was not computed but it should be approximately the same.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±2.4 percent.

Growth.--Estimates of timber growth are based on measurements of radial growth in sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number and size of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding date of inventory were recorded, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±9.5 percent, or ±3.4 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors on county data are shown below:

Item	Percent of error	
	Low	High
Forest area	±1.6	± 7.7
Growing stock volume	±6.6	±16.9
Board-foot volume	±7.1	±19.1

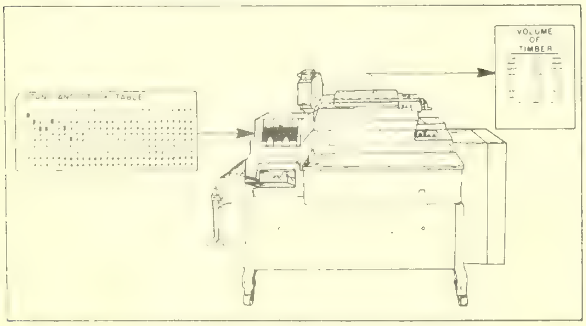
HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia

No. 22 - Southern Forests as a Source of Pulpwood

No. 23 - 1946 Pulpwood Production by County in the Southeast

No. 24 - Southern Pulpwood Production and the Timber Supply

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina

No. 26 - 1946 Commodity Drain by County from South Carolina Forests

No. 27 - 1947 Pulpwood Production by County in the Southeast

No. 28 - South Carolina's Forest Resources, 1947

No. 29 - 1948 Pulpwood Production by County in the Southeast

No. 30 - Forest Resources of Northeast Florida, 1949

No. 31 - Forest Resources of Central Florida, 1949

No. 32 - Forest Resources of Northwest Florida, 1949

No. 33 - Forest Resources of South Florida, 1949

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948

No. 35 - 1949 Pulpwood Production in the South (Out of print)

No. 36 - Forest Statistics for Florida, 1949

No. 37 - Forest Statistics for Southwest Georgia, 1951

No. 38 - 1951 Pulpwood Production in the South

No. 39 - Forest Statistics for Southeast Georgia, 1952

No. 40 - Forest Statistics for Central Georgia, 1952

No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952

No. 42 - Forest Statistics for North Central and North Georgia, 1953

No. 43 - 1953 Pulpwood Production in the South

No. 44 - Forest Statistics for Georgia, 1951-53

OTHER REPORTS

Pulpwood Production in the South, 1950. Forest Survey Release No. 69

1952 Pulpwood Production in the South. Forest Survey Release No. 72

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3

The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

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FOREST SURVEY RELEASE NO. 46

JANUARY 1956

FOREST STATISTICS FOR THE MOUNTAIN REGION OF NORTH CAROLINA, 1955

by

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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
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In cooperation with the
NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
DIVISION OF FORESTRY
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FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

The forest resources of North Carolina were first inventoried by the Forest Survey during the years 1937-38. In 1952 a resurvey was started to determine the changes which have taken place since the first inventory, and to obtain up-to-date figures on forest area, timber volumes, growth, and timber cut. So far, field work has been completed in 3 out of 4 survey units and is continuing in the Piedmont area. This report presents resurvey statistics for the Mountain Region of North Carolina, which is known as Survey Unit No. 4.

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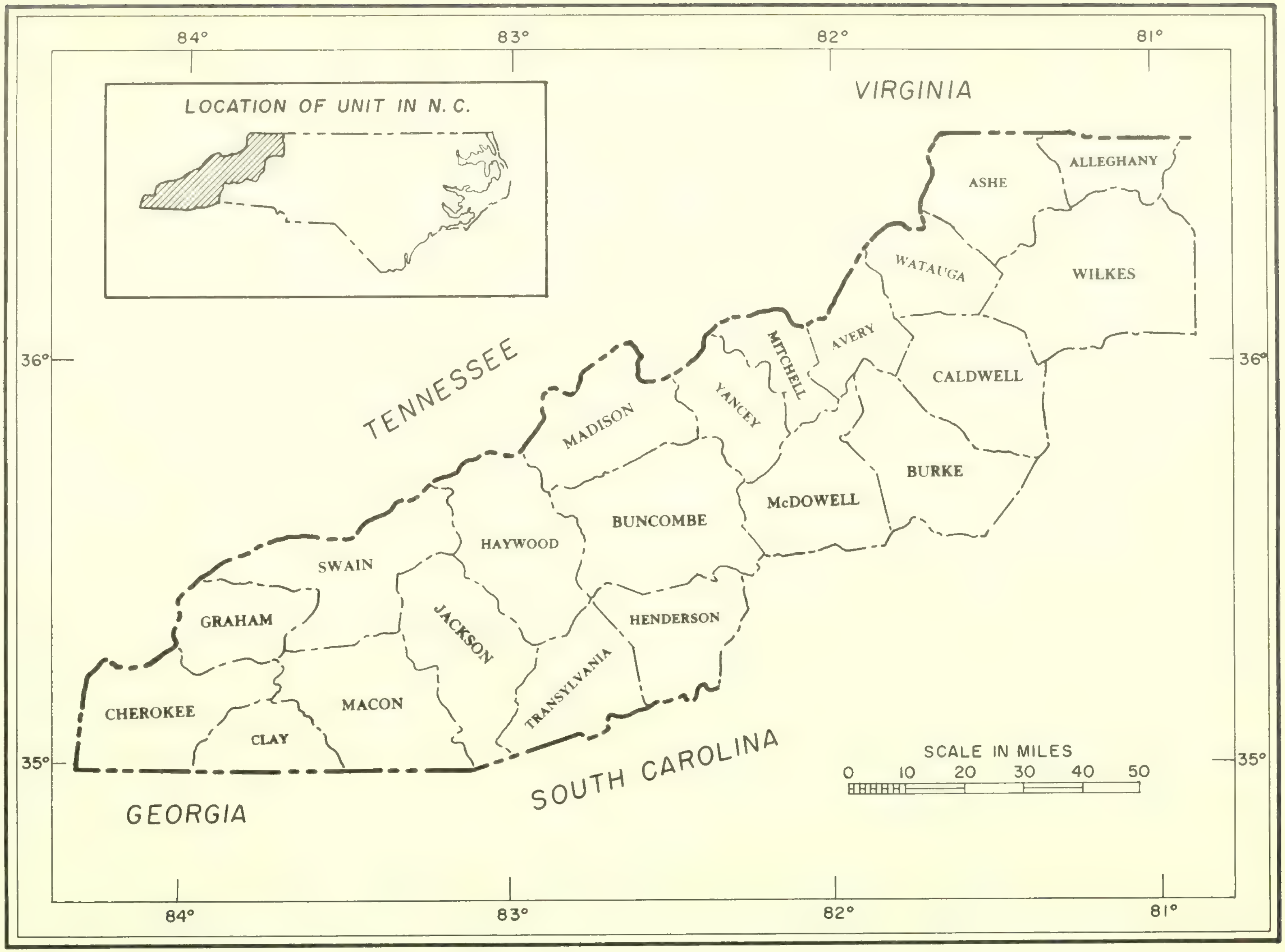

Figure 1.--Counties in the Mountain Region of North Carolina included in Forest Survey Unit No. 4.

FOREST STATISTICS FOR THE MOUNTAIN REGION OF NORTH CAROLINA, 1955

The Mountain Region of North Carolina is located in a relatively narrow belt running along the western edge of the State. It is a 21-county area bounded on the east by the Piedmont and on the other sides by state lines of four adjoining southern states, as shown in figure 1. The steep, rugged terrain, together with marked differences in the type and composition of the forest cover, set this region apart from the rest of the State.

North Carolina's forest resources were originally inventoried by the Forest Survey during the years 1937-38. A new inventory of the State is now being made to obtain up-to-date information on forest area, timber volumes, growth, and the amount of timber cut. This progress report presents statistical data compiled from a resurvey of the Mountain Region started in March and completed in July 1955. Basic data were obtained from 1,450 one-fifth-acre forest sample plots distributed throughout all 21 counties. In addition, 300 nonforest plots were checked on the ground to increase the reliability of the forest area estimate. Procedures used in the Forest Survey are described briefly on page 46.

Timber stands which exist today are different in many respects from those which were found by the cruisers 17 years ago. The new inventory not only provides current facts on the forest resource, but it also presents an opportunity to determine the long-term trends which have had an effect in shaping the present-day stands. The changes discussed on the following pages all stem from a comparison of statistics for the two surveys. A careful adjustment of the 1938 survey data has been made to eliminate differences arising from definition or standards of measurement, so that valid comparisons could be made.

HIGHLIGHTS AND TRENDS FOUND BY THE 1955 SURVEY

Four out of every five acres are forested.--The Mountain Region in Western North Carolina is the most heavily forested area in the State. Nearly 4.4 million acres were found to be under forest cover during the 1955 survey. This is 77 percent of the total land area in the Unit, making the ratio of forest to nonforest land nearly 4 acres to 1 (fig. 2). The proportion of forest land by county ranges from a low of 44 percent in Allegheny to a high of 94 percent in Swain County. It is highest in the western portion of the Unit, where 7 counties each have more than 80 percent of their land area in forest. Cropland, pasture, and other agricultural uses occupy most of the remaining acreage.

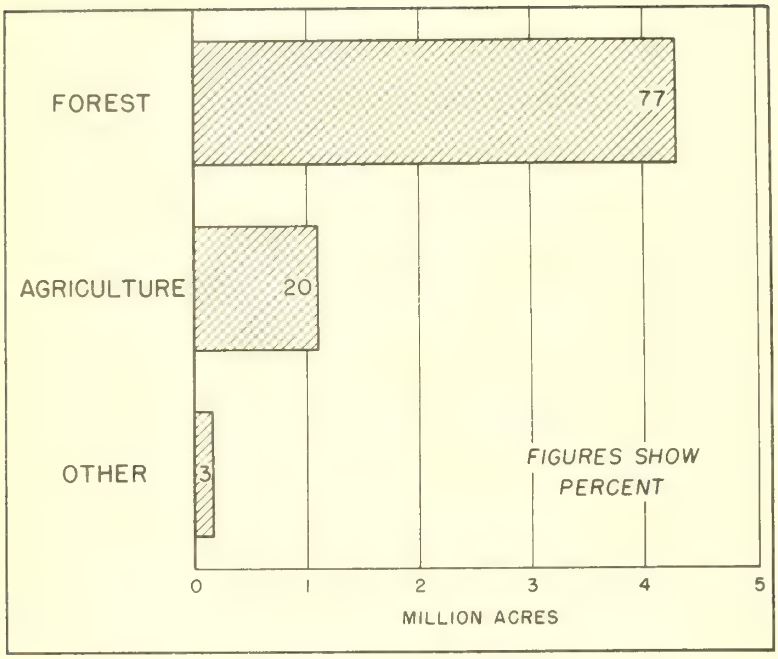

Figure 2.--Land use in the Mountain Region of North Carolina.

The present trend in land use is toward more forest and less agricultural land. Since 1938, the area supporting forests has been spreading as more and more abandoned fields and pastures were taken over by timber stands. The 1955 survey shows a 14-percent gain in forest area, which amounts to more than a half million acres. The trend is unitwide, with each of the 21 counties showing a higher proportion of forest land now than they had 17 years ago.

Public agencies own 30 percent of the forest land.--Various Federal, State, and local government agencies own and administer 1.3 million acres of forest land in the mountain area (table A). The Pisgah and Nantahala National Forests contain over 900,000 acres of Federally-owned land, with boundaries extending into all but 2 of the 21 counties. The eastern portion of the Great Smoky Mountains National Park, located in Haywood and Swain Counties, contains 270,000 acres of rugged and isolated forest country. The National Park Service also owns about 28,000 acres of forest along the right-of-way of the Blue Ridge Parkway, a modern scenic highway built high up along the ridge of the mountain chain. The Qualla Reservation of the Cherokee Indians lies mostly in Swain and Jackson Counties and contains 53,000 acres of forest land. Much of the remaining public forest land is found in 20 municipal watersheds owned by cities and towns, the largest of which is the Asheville watershed, containing about 20,000 acres.

All the public forest land is not available for commercial timber production. There are 320,000 acres within the boundaries of parks, recreation areas, memorial forests, and municipal watersheds where commercial cutting operations are not permitted. An additional 31,000 acres of rock outcrops, cliffs, and mountain balds were classed as noncommercial forest land because of poor site conditions.

Table A.--Land ownership, 1955

Ownership	Forest land area			
	Commercial	Noncommercial	Total	
	Acres	Acres	Acres	Percent
Public:				
National forests	890,600	19,800	910,400	20.9
Great Smoky Mts. N. P.	--	270,500	270,500	6.2
Blue Ridge Parkway	--	28,000	28,000	0.6
Indian	52,100	400	52,500	1.2
Other Federal	6,300	--	6,300	0.2
State	5,800	1,400	7,200	0.2
County & municipal	16,900	30,700	47,600	1.1
Total public	971,700	350,800	1,322,500	30.4
Private:				
Farm woodlands	2,288,600	6,900	2,295,500	52.7
Industrial & other	730,700	3,500	734,200	16.9
Total private	3,019,300	10,400	3,029,700	69.6
Total forest land	3,991,000	361,200	4,352,200	100.0

Approximately half of all the forest land in the Unit is in private farm woodlands, where the number of owners is large and the size of the average tract is small. An additional 17 percent is held by industrial or other private interests.

Forest types are principally hardwood.--Western North Carolina is a region of hardwood forests. Timber stands composed mainly of hardwood species are found on 3.2 million acres, or about 80 percent of the commercial forest area. The oak-hickory type is by far the most extensive. In this broad type classification, the most prevalent species are white oaks, red oaks, and hickory in association with yellow-poplar, basswood, and soft maple. Limited areas of the northern hardwood type including sugar maple, beech, and yellow birch, are found along the upper elevations. Stands of yellow pine, usually found on the lower slopes, make up about three-fourths of the softwood type area. Mixtures of white pine and hemlock are also important, and a small acreage of spruce and balsam fir is found on the tops of the higher mountains.

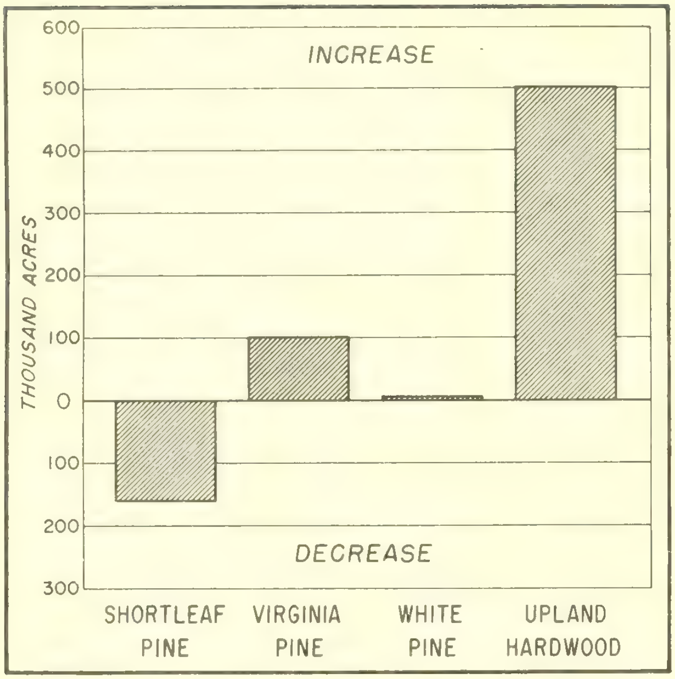

Figure 3.--Change in area of forest types, 1938 to 1955.

The area of hardwood forest types is increasing. Since 1938 they have gained a half million acres, indicating that a large proportion of the land which reverted to forest during the period became stocked with hardwood species (fig. 3). During the 17-year period, the areas in shortleaf and Virginia pine types have exhibited opposite trends with shortleaf decreasing and Virginia pine increasing. The net result has been a decrease of 60,000 acres in yellow-pine types, a loss of 7 percent. Mixtures of white pine and hemlock show only a slight increase in area.

Number of sound trees shows a substantial increase.--Comparisons of stand table data obtained from the 1938 and 1955 surveys show a rise of nearly 150 million in the number of sound trees one inch and larger in diameter, an increase of 13 percent. The number of trees of volume size, which range in diameter from 5.0 inches up, shows a gain of 118 million. Part of this increase is undoubtedly the result of increases in forest land area discussed earlier. However, it is obvious that timber cutting, fire protection, and other activities have influenced the development of present stands.

The upward trend is found in all species groups except yellow pines. Shortleaf, pitch, and Virginia pines comprise only one-eighth of the total stand, but they are much sought after for the production of lumber, pulpwood, and other forest products. A heavy rate of cutting has decreased the number of yellow pines in the larger, more valuable sizes, as shown in figure 4. The number of 10-inch trees is slightly higher, but the only important increase has been in the 6- and 8-inch pole trees. The smaller sapling-size trees also show a decrease, which may be an indication that hardwoods are hindering the reestablishment of young pines that will be vitally needed for the production of future timber crops.

White pine is the most important other softwood tree in the Mountain Region. It is also eagerly cut by loggers, but many of the trees are scattered throughout the hardwood stands, making the harvesting of this individual species more difficult. White pine grows rapidly and has been widely planted throughout the area in recent years. It also tends to reproduce itself and spread out under an effective program of forest fire control. The number of white pines has increased in all diameters up through 22 inches in size.

The largest gains are, of course, in the number of sound hardwoods. These species show a total increase of 125 million trees including a gain of 100 million trees in volume sizes. Most individual hardwood species have followed the same trend and now exist in greater numbers up to 22 or 24 inches in size. One of the reasons behind this change is the poor quality of much of the timber. Such species as scarlet and chestnut oaks are in good supply, but they produce lumber that is excessively knotty or brash. The heavy, dense wood found in hickory and black locust makes general use of these species for lumber or timbers impractical. The use of hardwoods for pulpwood is on the increase but is still of relatively minor importance. At the present time, there is obviously an oversupply of low-grade hardwoods which are creating problems in silviculture and utilization for this segment of the forest resource.

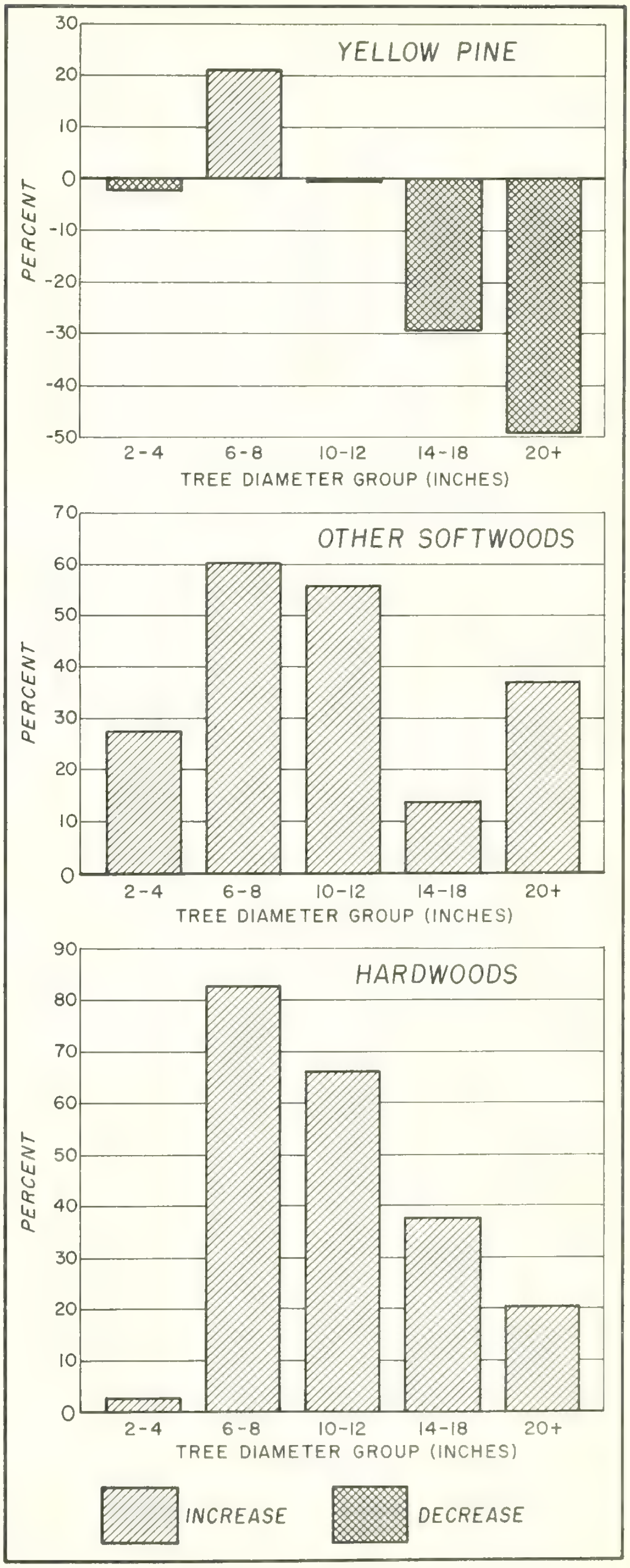

Figure 4.--Change in number of sound trees since 1938.

Sawtimber volume is 22 percent greater.--The volume of sawtimber material in the Unit now stands at 8.7 billion board feet. It has increased by 1.6 billion feet, or 22 percent, in 17 years (table B). As would be expected from the change in numbers of trees, the yellow pines are down 14 percent with a loss of 163 million feet. The other species groups show increases which are about equal in terms of percent, but the hardwood species account for nine-tenths of the over-all rise.

Table B.--Comparison of sawtimber volume, 1938 and 1955

Species group	1938[1]	1955	Change	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Yellow pines	1,154	991	-163	-14
Other softwoods	1,116	1,449	+333	+30
Hardwoods	4,835	6,236	+1,401	+29
All species	7,105	8,676	+1,571	+22

[1] Original survey volumes have been recomputed to allow for differences in standards between the two surveys and to provide a uniform basis for comparison. Thus, the 1937 estimates shown here will not agree with the volumes previously published.

Along with the change by species group there has also been a shift in volume by tree-size class. Many of the larger trees have either been harvested and used, or lost through mortality from natural causes. The volume of soft-textured hardwoods (including the preferred yellow-poplar, basswood, and buckeye species) in trees 26 inches and larger has been cut in half. However, these losses have been more than compensated for by volume increases in the smaller hardwood sawtimber trees.

The gradual disappearance of blight-killed chestnut has also had an effect on the sawtimber supply. In 1938, about 800 million board feet were judged to be sufficiently sound for use as lumber, timbers, paneling, or extract wood. A great deal of this material has been salvaged and the remainder has deteriorated to a point where it is no longer considered as a source of raw material. A few of the remaining chestnut snags may still be cut for commercial use, but none of the chestnut was assigned board-foot volume in the 1955 survey.

The two national forests in the Region contain an estimated 2.8 billion board feet of sawtimber on 891 million acres of commercial forest land. These timber stands are heavier and more mature than the general run. They contain an average of 3,128 board feet per acre, as compared to 1,864 feet per acre found on private lands.

Species of oak predominate.--Nearly 3.5 billion board feet, or two-fifths of the sawtimber volume in the Unit, is made up of various species of oak. The red oaks constitute the largest group, with scarlet, northern red, and black oak as principal species (fig. 5). In the white oak group, chestnut oak trees contain two-thirds of the volume. Yellow-poplar and hickory are also important. The remaining hardwood sawtimber is made up of a large number of minor species including ash, beech, basswood, maple, birch, and locust. In the softwoods, both shortleaf pine and white pine each contain about three-fourths of a billion board feet. These species are followed in order by hemlock, Virginia pine, spruce, and balsam fir.

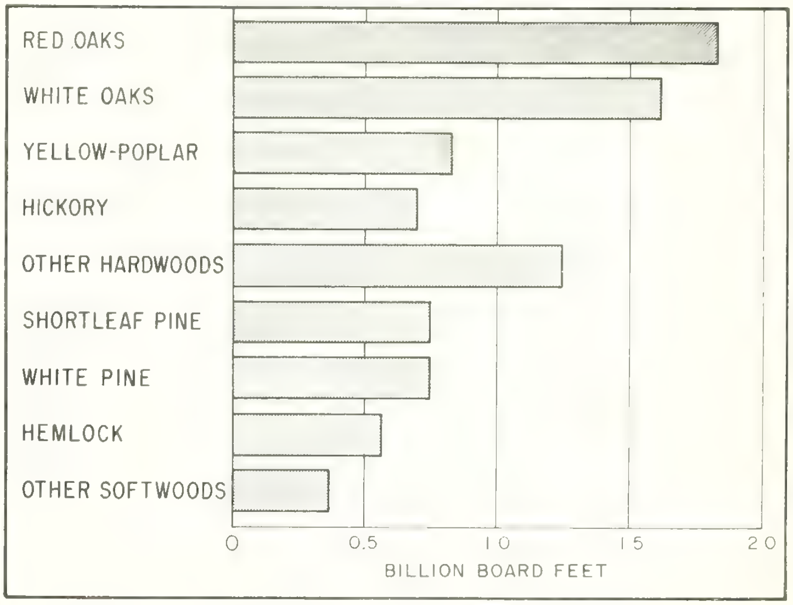

Figure 5.--Sawtimber volume by species.

Approximately 80 percent of the sawtimber volume is found in trees ranging from a minimum 9-inch diameter through 20 inches in size. Volumes are heaviest in the smaller diameter classes as indicated in figure 6. Hardwood species contain nearly three-fourths of the sawlog material and make up the bulk of the volume in all tree sizes. The yellow pines do not usually run much larger than 20 inches in diameter, but some of the white pines, hemlocks, and hardwood species range up to 40 inches and more in size.

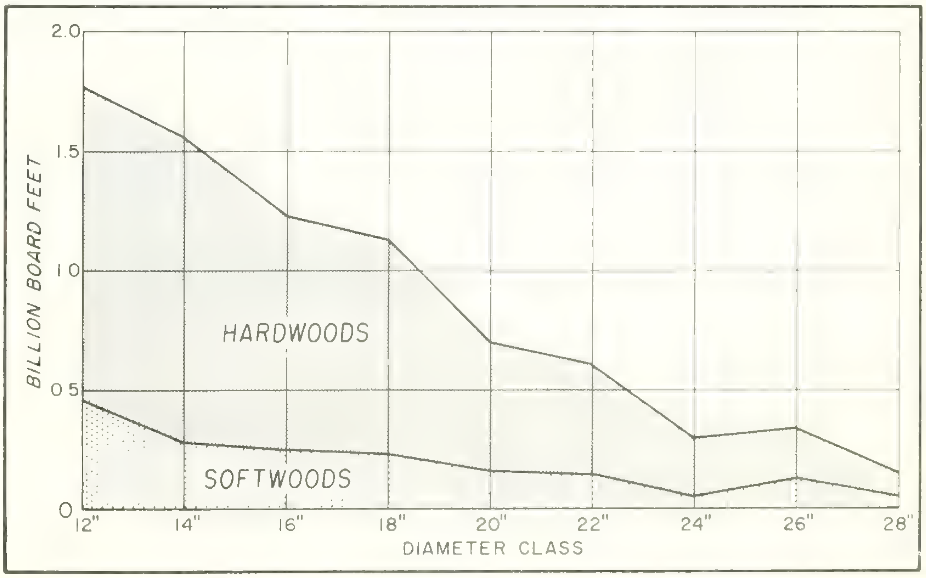

Figure 6.--Distribution of sawtimber volume by diameter class.

Growing stock volume is up 40 percent.--The level of growing stock volume shows a surprising rate of increase since 1938. The present estimate of 2.9 billion cubic feet is 40 percent greater than at the time of the original survey. Here again, hardwood species account for most of the gain, being up three-quarters of a billion feet. There was also a considerable increase in the amount of other softwood growing stock, but the yellow pines show no change in volume (table C). To make the difference between growing stock and sawtimber volume clear, the following description is given: Growing stock is a term which includes the volume of all sound pole trees, starting at 5.0 inches in diameter at breast height, as well as the larger sawtimber trees which start at 9 inches for softwoods and 11 inches for hardwoods. Volumes are customarily computed in terms of cubic feet of wood, excluding bark, or in terms of standard cords including wood plus bark. Growing stock does not include the volume of cull trees, or of trees smaller than 5.0 inches in size which, for inventory purposes, are assumed to have no volume.

Table C.--Comparison of volume in all trees 5.0 inches d.b.h. and larger, 1938 and 1955

Species group and class of material	1938[1]	1955	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Growing stock:				
Yellow pines	384	384	0	0
Other softwoods	229	307	+78	+34
Hardwoods	1,477	2,228	+751	+51
All species	2,090	2,919	+829	+40
Cull trees:				
Yellow pines	49	104	+55	+112
Other softwoods	15	45	+30	+200
Hardwoods[2]	555	864	+309	+56
All species	619	1,013	+394	+64
All live trees	2,709	3,932	+1,223	+45

[1] See footnote 1, table B.

[2] Excludes limb volume of hardwood sawtimber trees.

Table C shows that the amount of material in cull trees is also up sharply. A cull quality classification is assigned to a tree when it contains sufficient sound or rotten defect to make it unmerchantable for saw logs either at the time of inventory, or at some future date when it will reach sawtimber size. Many of the cull trees can actually be used for such products as pulpwood, fence posts, and other items where clear length and straightness are not limiting factors.

The increase in both growing stock and cull trees has left the proportion of cull volume in the stands about the same. At the time of the first survey, 23 percent of the total volume in all live trees was classed as cull, while cull volume at present accounts for 26 percent.

Annual growth of sawtimber is 438 million board feet; of growing stock 2.4 million cords.--Western North Carolina forests are currently producing sawtimber at the rate of 438 million board feet per year. About half of this annual volume increase takes place on the oaks, hickories, and other hard-textured hardwood species which dominate the stands. Altogether, the hardwoods account for 320 million board feet, or approximately three-fourths of the total sawtimber growth.

The yearly increase in growing stock volume, including all sound trees 5.0 inches d.b.h. and larger, amounts to 155 million cubic feet of solid wood, or 2.4 million cords of wood and bark. Here again, the proportion of volume growth is about three-fourths hardwood and one-fourth softwood.

These timber growth estimates for the Mountain survey unit are based on the examination of increment cores taken from 2,400 sample trees scattered throughout all 21 counties. The cores were used to measure the rate of increase in tree diameter. They were also used to determine the number of young trees which are expected to reach volume size during the year, thus creating ingrowth. Sapling trees growing into pole size make up about 18 percent of the net growth on growing stock, and pole trees growing into sawtimber sizes account for 38 percent of the increase in board-foot volume.

Stands of white pine show the highest rate of production, with an average of 229 board feet, or 0.8 cord per acre per year. The average growth of timber stands, including all forest types and conditions in the unit, is 120 board feet, or 0.6 cord, per acre annually. This average is rather low, but it is heavily weighted by the slower-growing oaks and other hard hardwood species. In terms of total volume growth, the average annual rate of increase for all species is about 5 percent for sawtimber volume in board feet, and 6 percent for growing stock volume in standard cords.

Supply of hardwoods continues to increase.--In the 17-year period between 1938 and 1955, the volume of hardwood sawtimber increased 29 percent, while the supply of hardwood growing stock shows a gain of 51 percent. Comparisons of the current rate of growth with the amount of timber cut indicate that this strong upward trend is still continuing (fig. 7). Logging operations, together with all other uses, are removing an average of 172 million board feet of hardwood sawtimber annually. This is only a little more than half the annual growth, leaving 147 million feet in the stands to increase the available supply. The annual gain in growing stock volume is even greater, with the volume cut amounting to 42 million cubic feet, or only 37 percent of the yearly growth.

The recent trend in the volume of softwood sawtimber is in the opposite direction. Harvesting activities for the removal of yellow pine, white pine, and hemlock have reached a level of 137 million board feet per year, which is 16 percent greater than the volume of growth for these species. The demand for white pine has been particularly heavy, with a good share of the output going into furniture manufacture. Yellow pine species are always preferred for the production of construction lumber and pulpwood bolts, and the requirements for these items have been increasing in recent years.

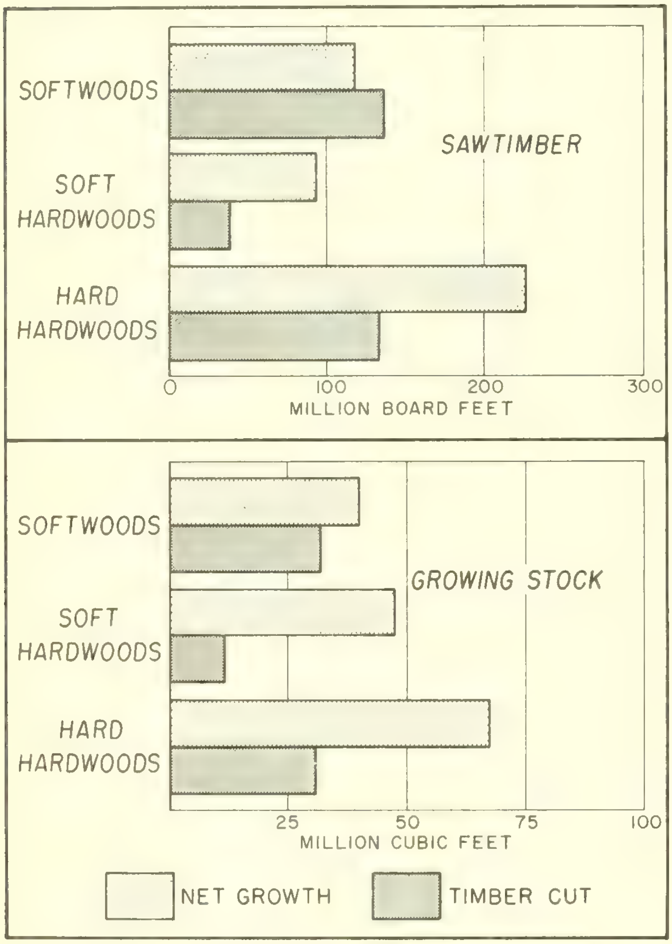

Figure 7.--Comparison of timber growth and timber cut in the Mountain Region of North Carolina.

Cutting pressure on the softwood supply has been heaviest on the larger sawtimber-size trees. The volume of softwood growing stock, which includes the smaller pole trees, continues to follow the long-term trend by showing a surplus of growth over cut. This situation, where sawtimber is declining and growing stock is increasing, reflects the change in stand structure created by the effects of timber cutting and growth. Today's softwood timber stands are considerably younger, and they contain many more small trees and fewer large ones.

Table 1.--Gross area[1] by broad use class, 1955

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	3,991.0	69.9
Noncommercial:		
Productive-reserved	319.3	5.6
Unproductive	41.9	0.7
Total forest	4,352.2	76.2
Nonforest land:		
Agriculture	1,124.8	19.7
Urban and other[2]	157.7	2.8
Total nonforest	1,282.5	22.5
Total land area	5,634.7	98.7
Total water area[3]	74.1	1.3
All classes	5,708.8	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[3] Includes 45,400 acres of Census water reported in 1950 and 200 acres created since 1950, plus 28,500 acres of water in small streams and lakes which is defined by the Bureau of the Census as land area.

Table 2.--Ownership of commercial forest land, 1955

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	890.6	22.3
Indian	52.1	1.3
Other Federal	6.3	0.2
Total Federal	949.0	23.8
State	5.8	0.1
County and municipal	16.9	0.4
Total public	971.7	24.3
Private land:		
Farm	2,288.6	57.4
Other	730.7	18.3
Total private	3,019.3	75.7
All classes	3,991.0	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1955

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	34.2	106.4	130.0	39.1	--	309.7
Virginia pine	--	43.9	149.4	44.5	8.3	246.1
White pine	61.1	62.1	44.9	26.8	--	194.9
Spruce fir	5.1	--	5.6	--	3.5	14.2
Total	100.4	212.4	329.9	110.4	11.8	764.9
Hardwood types:						
Oak-pine	35.9	59.5	135.7	30.5	12.9	274.5
Maple-beech-birch	85.7	56.9	72.4	25.6	--	240.6
Oak-hickory	619.9	461.9	1,119.7	386.7	122.8	2,711.0
Total	741.5	578.3	1,327.8	442.8	135.7	3,226.1
All types	841.9	790.7	1,657.7	553.2	147.5	3,991.0
Percent	21.1	19.8	41.5	13.9	3.7	100.0

[1] See description of forest types and stand-size classes under Definition of Terms.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, 1955

(In million board feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Shortleaf pine[3]	163.9	425.8	119.7	41.2	2.4	753.0
Virginia pine	16.8	175.0	46.2	--	--	238.0
Total	180.7	600.8	165.9	41.2	2.4	991.0
White pine	402.0	267.1	54.9	22.0	--	746.0
Hemlock	488.9	25.6	15.9	40.0	--	570.4
Spruce and balsam fir	117.4	2.3	1.8	5.4	6.0	132.9
Total sftwds.	1,189.0	895.8	238.5	108.6	8.4	2,440.3
Hardwoods:						
Blackgum	65.1	34.5	35.1	1.9	--	136.6
Yellow-poplar	445.5	225.9	146.5	13.3	3.7	834.9
Soft maple	96.8	56.7	18.6	2.9	--	175.0
Basswood	153.8	29.2	37.8	--	--	220.8
Cucumber	30.5	1.0	3.8	2.5	--	37.8
Other soft hdwds.	68.0	22.8	16.2	1.5	--	108.5
Total	859.7	370.1	258.0	22.1	3.7	1,513.6
White oak	237.0	185.9	93.9	12.5	2.9	532.2
Chestnut oak	611.2	237.9	188.8	36.0	15.0	1,088.9
Northern red oak	533.5	142.1	88.5	9.6	5.3	779.0
Other red oaks	469.0	369.3	181.1	26.3	4.6	1,050.3
Hickory	412.0	156.9	109.0	14.9	6.6	699.4
Ash	30.3	11.0	18.2	--	--	59.5
Beech	56.3	34.6	25.1	--	--	116.0
Sugar maple	28.9	12.0	16.2	--	--	57.1
Yellow birch	38.9	3.0	2.5	4.0	--	48.4
Black walnut	13.6	11.8	6.7	1.8	4.0	37.9
Other hard hdwds.	123.8	59.7	61.6	4.3	4.1	253.5
Total	2,554.5	1,224.2	791.6	109.4	42.5	4,722.2
Total hdwds.	3,414.2	1,594.3	1,049.6	131.5	46.2	6,235.8
All species	4,603.2	2,490.1	1,288.1	240.1	54.6	8,676.1
Percent	53.1	28.7	14.8	2.8	0.6	100.0

[1] Log scale, International 1/4-inch rule.

[2] See Definition of Terms for species combined with others.

[3] Includes pitch pine.

Table 5.--Net volume[1] of sawtimber by species and diameter class, 1955

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Shortleaf pine[3]	448.2	270.3	34.5	--	753.0	8.7
Virginia pine	189.9	48.1	--	--	238.0	2.7
Total	638.1	318.4	34.5	--	991.0	11.4
White pine	239.0	270.3	161.2	75.5	746.0	8.6
Hemlock	44.7	113.2	143.0	269.5	570.4	6.6
Spruce and balsam fir	25.8	61.1	24.8	21.2	132.9	1.5
Total sftwds.	947.6	763.0	363.5	366.2	2,440.3	28.1
Hardwoods:						
Blackgum	33.5	73.0	30.1	--	136.6	1.6
Yellow-poplar	207.7	437.3	116.8	73.1	834.9	9.6
Soft maple	52.5	92.7	29.8	--	175.0	2.0
Basswood	40.7	128.1	46.1	5.9	220.8	2.6
Cucumber	6.5	31.3	--	--	37.8	0.4
Other soft hdwds.	30.9	62.9	14.7	--	108.5	1.3
Total	371.8	825.3	237.5	79.0	1,513.6	17.5
White oak	126.1	272.8	94.6	38.7	532.2	6.1
Chestnut oak	191.2	491.7	265.7	140.3	1,088.9	12.5
Northern red oak	87.3	316.5	224.6	150.6	779.0	9.0
Other red oaks	237.6	591.2	175.8	45.7	1,050.3	12.1
Hickory	136.1	341.0	173.3	49.0	699.4	8.1
Ash	12.7	45.2	1.6	--	59.5	0.7
Beech	40.5	55.8	19.7	--	116.0	1.3
Sugar maple	11.7	38.0	7.4	--	57.1	0.7
Yellow birch	7.7	20.7	10.7	9.3	48.4	0.6
Black walnut	4.2	30.2	3.5	--	37.9	0.4
Other hard hdwds.	83.7	131.4	38.4	--	253.5	2.9
Total	938.8	2,334.5	1,015.3	433.6	4,722.2	54.4
Total hdwds.	1,310.6	3,159.8	1,252.8	512.6	6,235.8	71.9
All species	2,258.2	3,922.8	1,616.3	878.8	8,676.1	100.0
Percent	26.0	45.2	18.7	10.1	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

[3] Includes pitch pine.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1955

(In million board feet)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	150.2	365.9	77.7	30.0	--	623.8
Virginia pine	--	185.3	60.6	5.8	--	251.7
White pine	610.0	210.2	36.1	0.7	--	857.0
Spruce-fir	117.4	--	1.9	--	6.0	125.3
Total	877.6	761.4	176.3	36.5	6.0	1,857.8
Hardwood types:						
Oak-pine	195.8	180.4	95.5	29.2	--	500.9
Maple-beech-birch	525.9	200.3	60.9	9.9	--	797.0
Oak-hickory	3,003.9	1,348.0	955.4	164.5	48.6	5,520.4
Total	3,725.6	1,728.7	1,111.8	203.6	48.6	6,818.3
All types	4,603.2	2,490.1	1,288.1	240.1	54.6	8,676.1
Percent	53.1	28.7	14.8	2.8	0.6	100.0

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, 1955

Log grade	10 - 14 inches1/		16+ inches		All trees	
	Million bd. ft.	Percent	Million bd. ft.	Percent	Million bd. ft.	Percent
PINE						
Grade 1	--	--	--	--	--	(2/)
Grade 2	43.2	5.4	37.6	19.6	80.8	8.1
Grade 3	433.1	54.2	51.4	26.8	484.5	48.9
Grade 4	322.8	40.4	102.9	53.6	425.7	43.0
Total	799.1	100.0	191.9	100.0	991.0	100.0
OTHER SOFTWOODS						
Grade 1	--	--	--	--	--	(2/)
Grade 2	6.5	1.5	397.5	39.1	404.0	27.9
Grade 3	309.3	71.5	371.1	36.5	680.4	46.9
Grade 4	116.8	27.0	248.1	24.4	364.9	25.2
Total	432.6	100.0	1,016.7	100.0	1,449.3	100.0
SOFT HARDWOODS						
Grade 1	40.3	5.7	208.2	25.8	248.5	16.4
Grade 2	57.9	8.2	180.8	22.4	238.7	15.8
Grade 3	349.7	49.5	280.9	34.8	630.6	41.7
Grade 4	258.6	36.6	137.2	17.0	395.8	26.1
Total	706.5	100.0	807.1	100.0	1,513.6	100.0
HARD HARDWOODS						
Grade 1	--	--	409.0	14.4	409.0	8.7
Grade 2	105.4	5.6	565.1	19.9	670.5	14.2
Grade 3	280.5	14.9	650.3	22.9	930.8	19.7
Grade 4	1,496.4	79.5	1,215.5	42.8	2,711.9	57.4
Total	1,882.3	100.0	2,839.9	100.0	4,722.2	100.0

1/ Ten-inch hardwoods not included since they are below sawtimber size.

2/ Insufficient sample.

Table 8.--Net volume[1] of all timber by species and stand-size class, 1955

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Shortleaf pine[2]	500	1,849	1,125	187	7	3,668
Virginia pine	88	829	1,060	4	--	1,981
Total	588	2,678	2,185	191	7	5,649
White pine	800	804	400	76	8	2,088
Hemlock	927	78	65	85	--	1,155
Spruce and balsam fir	255	6	35	13	15	324
Total sftwds.	2,570	3,566	2,685	365	30	9,216
Hardwoods:						
Blackgum	239	210	253	33	1	736
Yellow-poplar	1,445	1,161	1,781	80	10	4,477
Soft maple	501	376	578	19	--	1,474
Basswood	544	346	182	37	--	1,109
Cucumber	84	15	47	6	--	152
Other soft hdwds.	266	116	221	20	3	626
Total	3,079	2,224	3,062	195	14	8,574
White oak	793	845	930	41	7	2,616
Chestnut oak	2,073	1,124	1,407	115	52	4,771
Northern red oak	1,486	598	753	25	23	2,885
Other red oaks	1,482	1,813	1,989	102	38	5,424
Hickory	1,227	817	682	83	25	2,834
Ash	95	77	109	9	--	290
Beech	304	152	182	--	--	638
Sugar maple	125	121	126	10	--	382
Yellow birch	102	42	16	18	--	178
Black walnut	46	33	75	5	10	169
Dogwood, persimmon	22	28	36	--	--	86
Other hard hdwds.	668	436	897	24	17	2,042
Total	8,423	6,086	7,202	432	172	22,315
Total hdwds.	11,502	8,310	10,264	627	186	30,889
All species	14,072	11,876	12,949	992	216	40,105
Percent	35.1	29.6	32.3	2.5	0.5	100.0
OTHER MATERIAL						
Sound culls:						
Softwoods	278	277	913	443	41	1,952
Hardwoods	2,788	1,884	3,662	895	600	9,829
Rotten culls	596	374	606	184	81	1,841
Hardwood limbs	904	255	337	92	52	1,640
Total other material	4,566	2,790	5,518	1,614	774	15,262

[1] Sound wood and bark.

[2] Includes pitch pine and redcedar.

Table 9.--Net volume[1] of all timber by species and diameter class, 1955

(In thousand cords)

GROWING STOCK

Species	Pole trees[2]		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Shortleaf pine[3]	744	799	774	651	631	69	3,668
Virginia pine	698	629	364	183	107	--	1,981
Total	1,442	1,428	1,138	834	738	69	5,649
White pine	322	237	333	268	522	406	2,088
Hemlock	55	47	47	73	232	701	1,155
Spruce and balsam fir	23	22	21	51	128	79	324
Total sftwds.	1,842	1,734	1,539	1,226	1,620	1,255	9,216
Hardwoods:							
Blackgum	107	184	60	111	204	70	736
Yellow-poplar	894	784	806	580	1,050	363	4,477
Soft maple	383	233	338	182	266	72	1,474
Basswood	129	181	241	123	327	108	1,109
Cucumber	12	--	43	19	78	--	152
Other soft hdwds.	127	139	75	90	162	33	626
Total	1,652	1,521	1,563	1,105	2,087	646	8,574
White oak	332	440	378	424	740	302	2,616
Chestnut oak	494	858	547	632	1,331	909	4,771
Northern red oak	253	282	395	278	851	826	2,885
Other red oaks	647	911	982	806	1,580	498	5,424
Hickory	357	307	362	433	883	492	2,834
Ash	37	78	18	38	116	3	290
Beech	88	130	75	139	160	46	638
Sugar maple	66	65	103	35	97	16	382
Yellow birch	24	18	15	25	52	44	178
Black walnut	16	7	41	14	83	8	169
Dogwood, persimmon	76	9	1	--	--	--	86
Other hard hdwds.	610	488	199	288	364	93	2,042
Total	3,000	3,593	3,116	3,112	6,257	3,237	22,315
Total hdwds.	4,652	5,114	4,679	4,217	8,344	3,883	30,889
All species	6,494	6,848	6,218	5,443	9,964	5,138	40,105
Percent	16.2	17.1	15.5	13.6	24.8	12.8	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	348	532	304	271	277	220	1,952
Hardwoods	1,529	1,356	1,572	1,170	2,309	1,893	9,829
Rotten culls	79	199	199	101	386	877	1,841
Hardwood limbs	--	--	--	--	681	959	1,640
Total other material	1,956	2,087	2,075	1,542	3,653	3,949	15,262

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[1] Sound wood and bark.

[2] Ten-inch hardwoods are classed as pole-size trees, whereas 10-inch softwoods are classed as sawtimber. This is indicated by the shaded line.

[3] Includes pitch pine and redcedar.

Table 10.--Net volume[1] of all timber by species and class of material, 1955

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Shortleaf pine[3]	1,701	424	1,543	3,668	764	7
Virginia pine	533	121	1,327	1,981	702	--
Total	2,234	545	2,870	5,649	1,466	7
White pine	1,298	231	559	2,088	234	20
Hemlock	876	177	102	1,155	213	1
Spruce and balsam fir	212	67	45	324	39	4
Total sftwds.	4,620	1,020	3,576	9,216	1,952	32
Hardwoods:						
Blackgum	309	76	351	736	320	88
Yellow-poplar	1,568	425	2,484	4,477	242	46
Soft maple	416	104	954	1,474	749	160
Basswood	442	116	551	1,109	182	55
Cucumber	76	21	55	152	58	20
Other soft hdwds.	225	60	341	626	241	99
Total	3,036	802	4,736	8,574	1,792	468
White oak	1,113	353	1,150	2,616	968	212
Chestnut oak	2,218	654	1,899	4,771	2,357	329
Northern red oak	1,564	391	930	2,885	955	120
Other red oaks	2,225	659	2,540	5,424	1,585	284
Hickory	1,448	360	1,026	2,834	498	135
Ash	124	33	133	290	61	12
Beech	272	73	293	638	441	95
Sugar maple	114	34	234	382	251	37
Yellow birch	95	26	57	178	123	52
Black walnut	77	28	64	169	62	1
Dogwood, persimmon	--	--	86	86	128	22
Scrub oak[4]	--	--	--	--	578	18
Other hard hdwds.	579	166	1,297	2,042	1,361	333
Total	9,829	2,777	9,709	22,315	9,368	1,650
Total hdwds.	12,865	3,579	14,445	30,889	11,160	2,118
All species	17,485	4,599	18,021	40,105	13,112	2,150
Percent	43.6	11.5	44.9	100.0	85.9	14.1

[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes pitch pine and redcedar.

[4] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, 1955

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	497	1,755	855	105	--	3,212
Virginia pine	--	1,003	1,254	36	8	2,301
White pine	1,258	776	417	7	--	2,458
Spruce-fir	257	--	34	--	15	306
Total	2,012	3,534	2,560	148	23	8,277
Hardwood types:						
Oak-pine	580	730	897	122	--	2,329
Maple-beech-birch	1,500	911	688	25	--	3,124
Oak-hickory	9,980	6,701	8,804	697	193	26,375
Total	12,060	8,342	10,389	844	193	31,828
All types	14,072	11,876	12,949	992	216	40,105
Percent	35.1	29.6	32.3	2.5	0.5	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	66	303	376	154	--	899
Virginia pine	--	87	575	88	26	776
White pine	374	137	139	53	--	703
Spruce-fir	10	--	34	--	15	59
Total	450	527	1,124	295	41	2,437
Hardwood types:						
Oak-pine	124	227	294	126	37	808
Maple-beech-birch	579	176	229	32	--	1,016
Oak-hickory	3,413	1,860	3,871	1,161	696	11,001
Total	4,116	2,263	4,394	1,319	733	12,825
All types	4,566	2,790	5,518	1,614	774	15,262
Percent	29.9	18.3	36.1	10.6	5.1	100.0

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1955

(In million cubic feet)

GROWING STOCK

Species	Pole trees[2]		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Shortleaf pine[3]	36.4	55.2	57.4	48.5	50.2	5.7	253.4
Virginia pine	41.3	41.4	26.5	14.2	8.9	--	132.3
Total	77.7	96.6	83.9	62.7	59.1	5.7	385.7
White pine	21.4	17.8	26.0	22.9	45.9	38.4	172.4
Hemlock	3.6	3.5	3.8	6.1	20.8	67.6	105.4
Spruce and balsam fir	1.4	1.7	1.6	4.0	11.4	7.6	27.7
Total sftwds.	104.1	119.6	115.3	95.7	137.2	119.3	691.2
Hardwoods:							
Blackgum	6.3	12.1	4.4	8.8	16.3	5.7	53.6
Yellow-poplar	52.5	51.8	57.9	43.6	83.6	29.8	319.2
Soft maple	22.4	15.2	24.6	14.2	21.3	5.9	103.6
Basswood	7.4	11.9	17.3	9.2	25.8	9.0	80.6
Cucumber	0.6	--	3.1	1.5	6.3	--	11.5
Other soft hdwds.	7.5	9.0	5.4	6.9	13.1	2.8	44.7
Total	96.7	100.0	112.7	84.2	166.4	53.2	613.2
White oak	17.9	28.5	26.7	31.0	58.7	24.7	187.5
Chestnut oak	26.5	55.2	39.0	47.0	105.2	74.4	347.3
Northern red oak	13.9	17.8	27.8	21.5	67.3	68.2	216.5
Other red oaks	34.2	59.5	69.8	58.5	126.6	41.2	389.8
Hickory	20.8	19.6	25.6	33.0	70.8	40.1	209.9
Ash	2.2	5.2	1.3	2.8	9.3	0.3	21.1
Beech	5.2	8.3	5.5	11.0	12.7	3.8	46.5
Sugar maple	3.7	4.1	7.4	2.6	7.8	1.4	27.0
Yellow birch	1.5	1.0	1.0	1.7	4.2	3.6	13.0
Black walnut	0.9	0.4	2.9	1.0	6.4	0.7	12.3
Dogwood, persimmon	4.1	0.5	0.1	--	--	--	4.7
Other hard hdwds.	35.9	30.8	14.2	21.4	29.2	7.6	139.1
Total	166.8	230.9	221.3	231.5	498.2	266.0	1,614.7
Total hdwds.	263.5	330.9	334.0	315.7	664.6	319.2	2,227.9
All species	367.6	450.5	449.3	411.4	801.8	438.5	2,919.1
Percent	12.6	15.4	15.4	14.1	27.5	15.0	100.0

OTHER MATERIAL

Sound culls							
Softwoods	20.8	36.6	23.6	21.1	23.3	20.5	145.9
Hardwoods	86.5	91.0	112.8	91.9	182.5	157.2	721.9
Rotten culls	6.2	13.6	14.2	7.5	30.9	73.0	145.4
Hardwood limbs	--	--	--	--	55.6	81.7	137.3
Total other material	113.5	141.2	150.6	120.5	292.3	332.4	1,150.5

[1] Excluding bark.

[2] Ten-inch hardwoods are classed as pole-size trees, whereas 10-inch softwoods are classed as sawtimber. This is indicated by the shaded line.

[3] Includes pitch pine and redcedar.

Table 13.--Net volume[1] of all timber by species and class of material, 1955

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Shortleaf pine[3]	134.3	27.5	91.6	253.4	54.8	0.5
Virginia pine	42.0	7.6	82.7	132.3	48.6	--
Total	176.3	35.1	174.3	385.7	103.4	0.5
White pine	118.4	14.8	39.2	172.4	19.8	1.9
Hemlock	80.7	17.6	7.1	105.4	19.3	0.1
Spruce and balsam fir	20.1	4.5	3.1	27.7	3.4	0.3
Total sftwds.	395.5	72.0	223.7	691.2	145.9	2.8
Hardwoods:						
Blackgum	24.7	6.1	22.8	53.6	23.6	7.5
Yellow-poplar	126.4	30.6	162.2	319.2	18.9	3.5
Soft maple	32.3	9.1	62.2	103.6	53.8	12.5
Basswood	35.7	8.3	36.6	80.6	14.2	4.7
Cucumber	6.2	1.6	3.7	11.5	4.3	1.3
Other soft hdwds.	17.6	5.2	21.9	44.7	17.6	7.9
Total	242.9	60.9	309.4	613.2	132.4	37.4
White oak	88.7	25.7	73.1	187.5	72.8	17.9
Chestnut oak	178.1	48.5	120.7	347.3	181.6	26.8
Northern red oak	125.0	32.0	59.5	216.5	75.3	9.6
Other red oaks	175.3	51.0	163.5	389.8	119.0	22.6
Hickory	114.9	29.0	66.0	209.9	39.3	11.1
Ash	9.9	2.5	8.7	21.1	4.2	0.8
Beech	21.3	6.2	19.0	46.5	32.0	7.9
Sugar maple	9.1	2.7	15.2	27.0	18.9	3.0
Yellow birch	7.6	1.9	3.5	13.0	9.4	4.3
Black walnut	6.3	1.8	4.2	12.3	4.8	0.1
Dogwood, persimmon	--	--	4.7	4.7	7.6	1.5
Scrub oak[4]	--	--	--	--	39.6	1.7
Other hard hdwds.	44.9	13.3	80.9	139.1	95.3	24.9
Total	781.1	214.6	619.0	1,614.7	699.8	132.2
Total hdwds.	1,024.0	275.5	928.4	2,227.9	832.2	169.6
All species	1,419.5	347.5	1,152.1	2,919.1	978.1	172.4
Percent	48.6	11.9	39.5	100.0	85.0	15.0

[1] Excluding bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes pitch pine and redcedar.

[4] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, 1955

(In board feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Shortleaf pine					
Softwood	3,381	2,954	554	717	1,712
Hardwood	1,005	487	43	50	303
Virginia pine					
Softwood	--	3,825	326	77	898
Hardwood	--	392	79	34	125
White pine					
Softwood	8,690	2,733	702	26	3,759
Hardwood	1,296	652	103	--	638
Oak-pine					
Softwood	2,283	1,337	278	267	767
Hardwood	3,184	1,697	425	406	1,057
Maple-beech-birch					
Softwood	2,904	1,671	88	231	1,480
Hardwood	3,231	1,852	754	155	1,832
Oak-hickory					
Softwood	152	150	36	119	98
Hardwood	4,694	2,768	818	299	1,939
All types					
Softwood	1,412	1,133	144	167	611
Hardwood	4,055	2,016	633	254	1,562

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1955

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[3]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Shortleaf pine										
Softwood	9.3	0.4	12.8	1.3	5.5	1.5	1.9	2.6	8.0	1.5
Hardwood	5.2	1.5	3.7	1.5	1.1	1.3	0.7	1.3	2.4	1.4
Virginia pine										
Softwood	--	--	19.4	1.5	6.9	3.4	0.6	2.0	7.8	2.7
Hardwood	--	--	3.5	0.5	1.5	0.5	0.2	0.2	1.6	0.4
White pine										
Softwood	15.8	3.1	7.8	0.5	6.2	0.3	0.3	2.0	8.9	1.5
Hardwood	4.8	3.0	4.7	1.7	3.1	2.8	--	--	3.7	2.1
Oak-pine										
Softwood	6.1	--	4.8	0.3	2.1	0.3	1.2	2.1	3.1	0.5
Hardwood	10.0	3.5	7.5	3.6	4.5	1.9	1.6	1.6	5.4	2.4
Maple-beech-birch										
Softwood	6.0	0.8	6.1	0.2	1.5	--	0.6	0.5	4.1	0.4
Hardwood	11.5	6.0	9.9	2.8	8.0	3.2	0.4	0.7	8.9	3.8
Oak-hickory										
Softwood	0.5	(4/)	0.5	(4/)	0.2	0.1	0.4	0.2	0.4	0.1
Hardwood	15.6	5.5	14.0	4.0	7.7	3.3	1.4	3.4	9.4	3.9
All types										
Softwood	3.1	0.3	4.5	0.4	1.6	0.6	0.6	0.7	2.3	0.5
Hardwood	13.7	5.1	10.5	3.2	6.2	2.8	1.2	2.7	7.7	3.3

[1] Sound wood and bark.

[2] Sound trees.

[3] Cull trees.

[4] Less than 0.05 cord per acre.

Table 16.--Number of trees[1] by species group, quality class, and tree size, 1955

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	121,613	48,177	13,243	854	183,887
Sound culls	(2/)	15,319	4,028	197	19,544
Rotten culls	(2/)	--	29	19	48
Total	121,613	63,496	17,300	1,070	203,479
Other softwoods:					
Sound trees	58,692	15,861	6,125	2,313	82,991
Sound culls	(2/)	2,492	1,018	389	3,899
Rotten culls	(2/)	--	--	60	60
Total	58,692	18,353	7,143	2,762	86,950
Soft hardwoods:					
Sound trees	225,772	55,863	6,969	2,786	291,390
Sound culls	(2/)	16,660	2,058	1,027	19,745
Rotten culls	(2/)	2,407	819	1,097	4,323
Total	225,772	74,930	9,846	4,910	315,458
Hard hardwoods:					
Sound trees	540,208	141,645	24,557	11,821	718,231
Sound culls	(2/)	71,432	9,092	5,512	86,036
Rotten culls	(2/)	10,154	2,297	3,606	16,057
Total	540,208	223,231	35,946	20,939	820,324
All species	946,285	380,010	70,235	29,681	1,426,211

[1] All trees 1.0 inch d.b.h. and larger.

[2] Data not collected.

Table 17.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1955

(In thousand acres)

Forest type	No planting required	Suitable for machine planting	Hand planting required	All classes
Shortleaf pine	39.1	--	--	39.1
Virginia pine	36.5	--	8.0	44.5
White pine	26.8	--	--	26.8
Spruce-fir	--	--	3.5	3.5
Oak-pine	34.7	--	--	34.7
Maple-beech-birch	14.3	--	5.3	19.6
Oak-hickory	386.9	13.0	57.1	457.0
All types	538.3	13.0	73.9	625.2
Percent	86.1	2.1	11.8	100.0

[1] Excludes 75,500 acres on which planting would be impractical because of existing dense cover of brush.

Table 18.--Stocking on commercial forest area by forest type and tree-size class, 1955

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Shortleaf pine	--	60.9	89.1	159.7	309.7
Virginia pine	11.9	36.5	84.7	113.0	246.1
White pine	--	34.0	62.7	98.2	194.9
Spruce-fir	3.5	3.1	--	7.6	14.2
Oak-pine	10.1	49.1	95.9	119.4	274.5
Maple-beech-birch	6.0	37.4	83.1	114.1	240.6
Oak-hickory	105.8	610.7	981.1	1,013.4	2,711.0
All types	137.3	831.7	1,396.6	1,625.4	3,991.0
Percent	3.5	20.8	35.0	40.7	100.0
SAWTIMBER GROWING STOCK					
Shortleaf pine	93.1	158.9	47.7	10.0	309.7
Virginia pine	158.7	61.1	16.1	10.2	246.1
White pine	52.7	83.3	42.9	16.0	194.9
Spruce-fir	6.7	2.4	--	5.1	14.2
Oak-pine	98.2	144.3	27.2	4.8	274.5
Maple-beech-birch	62.4	120.9	44.1	13.2	240.6
Oak-hickory	1,101.1	1,303.3	279.4	27.2	2,711.0
All types	1,572.9	1,874.2	457.4	86.5	3,991.0
Percent	39.4	46.9	11.5	2.2	100.0

Table 19.--Net annual growth by species group and unit of measure, 1955

Species group	Sawtimber	Growing stock	
	Million bd. ft.	Million cu. ft.	Thousand cords
So. yellow pines	54.0	23.3	384
Other softwoods	64.0	16.8	232
Soft hardwoods	93.3	47.4	741
Hard hardwoods	226.3	67.4	1,026
All species	437.6	154.9	2,383

Table 20.--Net annual growth percentages for each species group and unit of measure, 1955

Unit of measure	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board feet	5.46	4.41	6.16	4.79	5.04
Cubic feet	6.06	5.50	7.73	4.17	5.31
Standard cords	6.82	6.47	8.64	4.60	5.94

Table 21.--Average growth of sawtimber per acre by forest type and stand-size class, 1955

(In board feet)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Shortleaf pine	212	74	18	130
Virginia pine	146	61	5	64
White pine	332	82	3	229
Oak-pine	195	74	23	108
Maple-beech-birch	248	67	20	170
Oak-hickory	203	67	17	112
All types	217	68	17	120

Table 22.--Average growth of growing stock per acre by forest type and stand-size class, 1955

(In standard cords)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Shortleaf pine	0.8	0.7	0.1	0.6
Virginia pine	0.9	0.8	0.1	0.6
White pine	0.8	1.2	(1/)	0.8
Oak-pine	0.6	0.5	0.2	0.5
Maple-beech-birch	0.8	0.6	(1/)	0.6
Oak-hickory	0.7	0.6	0.1	0.6
All types	0.8	0.6	0.1	0.6
(In cubic feet)				
Shortleaf pine	55.7	40.5	6.8	43.1
Virginia pine	65.8	48.9	3.9	42.3
White pine	69.6	88.0	2.0	64.6
Oak-pine	45.3	29.5	13.1	32.4
Maple-beech-birch	59.9	40.8	3.1	48.1
Oak-hickory	55.4	40.8	9.6	40.7
All types	56.8	41.8	8.7	42.1

1/ Less than 0.05 cord per acre.

Table 23.--Average annual drain on sawtimber by tree-size class and species group

(In million board feet)

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
Small sawtimber	41.0	20.1	13.0	43.8	117.9
Large sawtimber	5.7	69.8	25.8	89.8	191.1
All trees	46.7	89.9	38.8	133.6	309.0

Table 24.--Average annual drain on growing stock by tree-size class and species group

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
(In thousand cords)					
Pole trees	86	4	59	58	207
Small sawtimber	123	49	36	129	337
Large sawtimber	13	125	58	212	408
All trees	222	178	153	399	952
(In million cubic feet)					
Pole trees	5.5	0.2	4.0	3.8	13.5
Small sawtimber	9.3	4.2	2.8	9.9	26.2
Large sawtimber	1.1	11.6	4.7	17.2	34.6
All trees	15.9	16.0	11.5	30.9	74.3

Table 25.--Net annual change in sawtimber volume by species group

(In million board feet)

Item	Softwood species	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1	2,440.3	1,513.6	4,722.2	8,676.1
Total growth	141.9	101.0	255.1	498.0
Mortality	23.9	7.7	28.8	60.4
Net growth	118.0	93.3	226.3	437.6
Timber cut	136.6	38.8	133.6	309.0
Loss or gain	-18.6	+54.5	+92.7	+128.6
Net volume, Dec. 31	2,421.7	1,568.1	4,814.9	8,804.7
Percent change	-0.8	+3.6	+2.0	+1.5

Table 26.--Net annual change in growing stock by species group

(In thousand cords)

Item	Softwood species	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1	9,216	8,574	22,315	40,105
Total growth	669	769	1,147	2,585
Mortality	53	28	121	202
Net growth	616	741	1,026	2,383
Timber cut	400	153	399	952
Loss or gain	+216	+588	+627	+1,431
Net volume, Dec. 31	9,432	9,162	22,942	41,536
Percent change	+2.3	+6.9	+2.8	+3.6
(In million cubic feet)				
Net volume, Jan. 1	691.2	613.2	1,614.7	2,919.1
Total growth	44.6	49.5	76.1	170.2
Mortality	4.5	2.1	8.7	15.3
Net growth	40.1	47.4	67.4	154.9
Timber cut	31.9	11.5	30.9	74.3
Loss or gain	+8.2	+35.9	+36.5	+80.6
Net volume, Dec. 31	699.4	649.1	1,651.2	2,999.7
Percent change	+1.2	+5.9	+2.3	+ 2.8

Table 27.--County area by broad use class, 1955

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alleghany	147.2	81.7	0.5	4.0	61.0	41.6
Ashe	273.3	132.1	--	1.3	139.9	51.2
Avery	158.1	40.4	--	1.2	116.5	73.7
Buncombe	414.1	107.6	1.5	26.6	278.4	67.5
Burke	330.9	75.8	7.8	0.2	247.1	76.5
Caldwell	307.2	65.7	3.3	([2])	238.2	78.4
Cherokee	298.9	32.4	10.8	1.9	253.8	88.1
Clay	140.1	16.3	3.8	2.5	117.5	86.2
Graham	191.4	14.1	9.3	4.1	163.9	90.0
Haywood	348.2	89.7	1.1	60.4	197.0	56.8
Henderson	244.4	67.9	0.4	([2])	176.1	72.2
Jackson	319.3	40.7	3.5	4.5	270.6	85.7
McDowell	286.1	50.8	4.7	6.8	223.8	79.5
Macon	332.8	55.5	5.9	6.4	265.0	81.1
Madison	291.8	88.8	1.1	1.5	200.4	68.9
Mitchell	140.8	32.9	--	5.0	102.9	73.1
Swain	348.2	19.6	10.4	213.2	105.0	31.1
Transylvania	242.6	21.8	0.2	1.0	219.6	90.6
Watauga	204.8	89.7	8.2	10.9	96.0	48.8
Wilkes	489.6	106.6	1.1	4.9	377.0	77.2
Yancey	199.0	52.4	0.5	4.8	141.3	71.2
Unit total	5,708.8	1,282.5	74.1	361.2	3,991.0	70.8

[1] Gross area from Bureau of the Census, 1950.

[2] Less than 50 acres.

Table 28.--Ownership of commercial forest land by county, 1955

County	Private		Public						
			National forest	Indian	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alleghany	61.0	100.0	--	--	--	--	(1/)	(1/)	--
Ashe	139.3	99.6	0.3	--	--	0.3	--	0.6	0.4
Avery	94.4	81.0	22.0	--	--	0.1	--	22.1	19.0
Buncombe	248.5	89.3	29.8	--	0.1	(1/)	(1/)	29.9	10.7
Burke	190.2	77.0	47.3	--	--	3.9	5.7	56.9	23.0
Caldwell	188.2	79.0	49.2	--	--	--	0.8	50.0	21.0
Cherokee	166.3	65.5	80.7	4.7	2.1	--	(1/)	87.5	34.5
Clay	57.1	48.6	57.8	--	2.6	--	--	60.4	51.4
Graham	60.3	36.8	101.4	1.7	0.5	--	--	103.6	63.2
Haywood	124.5	63.2	63.2	--	--	0.1	9.2	72.5	36.8
Henderson	156.9	89.1	18.2	--	--	0.9	0.1	19.2	10.9
Jackson	226.2	83.6	26.7	17.4	--	0.2	0.1	44.4	16.4
McDowell	164.0	73.3	59.3	--	--	(1/)	0.5	59.8	26.7
Macon	124.3	46.9	140.5	--	--	0.1	0.1	140.7	53.1
Madison	154.2	76.9	46.2	--	--	(1/)	(1/)	46.2	23.1
Mitchell	87.5	85.0	15.4	--	--	--	--	15.4	15.0
Swain	60.2	57.3	15.5	28.3	1.0	--	--	44.8	42.7
Transylvania	133.5	60.8	86.0	--	--	(1/)	0.1	86.1	39.2
Watauga	95.4	99.4	0.1	--	--	0.2	0.3	0.6	0.6
Wilkes	377.0	100.0	--	--	--	(1/)	--	(1/)	--
Yancey	110.3	78.1	31.0	--	--	(1/)	--	31.0	21.9
Unit total	3,019.3	75.7	890.6	52.1	6.3	5.8	16.9	971.7	24.3

1/ Less than 50 acres.

Table 29.--Net volume[1] of sawtimber by county and species group, 1955

(In million board feet)

County	Softwoods[2]	Yellow-poplar and basswood[3]	Oaks and other hard hardwoods	All species
Alleghany	41.2	20.0	58.1	119.3
Ashe	21.6	34.8	130.2	186.6
Avery	31.9	50.0	98.0	179.9
Buncombe	242.8	210.5	576.8	1,030.1
Burke	285.5	87.9	162.7	536.1
Caldwell	376.5	82.6	236.5	695.6
Cherokee	136.4	35.1	284.8	456.3
Clay	32.3	106.1	226.9	365.3
Graham	148.0	74.2	255.5	477.7
Haywood	36.5	72.6	221.1	330.2
Henderson	143.0	34.2	280.8	458.0
Jackson	84.7	109.5	318.7	512.9
McDowell	102.5	41.1	295.5	439.1
Macon	70.0	109.1	364.1	543.2
Madison	75.0	97.2	233.7	405.9
Mitchell	13.7	71.9	89.6	175.2
Swain	26.8	46.9	104.0	177.7
Transylvania	114.6	72.5	321.9	509.0
Watauga	87.3	18.8	44.8	150.9
Wilkes	202.5	91.9	206.4	500.8
Yancey	167.5	46.7	212.1	426.3
Unit total	2,440.3	1,513.6	4,722.2	8,676.1

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, hemlock, spruce, and balsam fir.

[3] Includes other soft hardwoods.

Table 30.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group, 1955

(In million board feet)

County	Softwoods			Hardwoods		
	9-14 inches	15-19 inches	20+ inches	11-14 inches	15-19 inches	20+ inches
Alleghany	13.8	13.2	14.2	33.8	26.9	17.4
Ashe	14.4	7.2	--	70.7	60.8	33.5
Avery	10.6	13.1	8.2	79.1	33.8	35.1
Buncombe	128.7	66.7	47.4	256.2	213.0	318.1
Burke	188.5	45.3	51.7	136.9	49.8	63.9
Caldwell	200.1	55.1	121.3	158.9	83.7	76.5
Cherokee	83.8	34.8	17.8	144.1	83.6	92.2
Clay	5.8	5.9	20.6	104.2	75.4	153.4
Graham	32.9	6.3	108.8	109.1	122.9	97.7
Haywood	15.0	15.7	5.8	104.7	103.2	85.8
Henderson	72.4	35.2	35.4	137.0	86.0	92.0
Jackson	5.8	35.0	43.9	206.3	129.9	92.0
McDowell	57.5	8.1	36.9	109.5	93.5	133.6
Macon	22.3	27.2	20.5	165.4	157.9	149.9
Madison	62.3	12.7	--	151.1	106.6	73.2
Mitchell	9.1	4.6	--	89.7	43.2	28.6
Swain	26.8	--	--	63.0	47.4	40.5
Transylvania	57.3	23.8	33.5	171.5	125.4	97.5
Watauga	12.5	6.4	68.4	32.4	23.8	7.4
Wilkes	175.0	18.7	8.8	157.7	102.7	37.9
Yancey	37.1	43.9	86.5	107.5	112.1	39.2
Unit total	1,231.7	478.9	729.7	2,588.8	1,881.6	1,765.4

[1] Log scale, International 1/4-inch rule.

Table 31.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1955

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alleghany	9	2	40	51	77	37	182	105	503
Ashe	--	--	57	26	146	63	343	274	909
Avery	--	--	37	49	282	92	486	194	1,140
Buncombe	520	115	67	191	501	397	1,326	1,231	4,348
Burke	963	94	163	157	325	121	730	287	2,840
Caldwell	759	137	267	323	403	124	693	479	3,185
Cherokee	556	71	58	73	190	67	1,048	518	2,581
Clay	14	11	11	45	117	196	518	479	1,391
Graham	70	15	51	196	170	147	421	533	1,603
Haywood	46	49	46	5	319	162	695	455	1,777
Henderson	160	67	82	108	152	56	639	561	1,825
Jackson	10	8	20	135	177	189	842	626	2,007
McDowell	271	58	5	64	222	77	700	608	2,005
Macon	169	38	32	73	524	184	639	778	2,437
Madison	140	32	141	36	408	176	563	458	1,954
Mitchell	--	--	23	9	314	114	354	167	981
Swain	110	6	21	--	64	102	212	192	707
Transylvania	132	35	72	94	260	141	762	648	2,144
Watauga	--	--	46	133	98	39	211	92	619
Wilkes	894	69	162	40	809	173	1,095	369	3,611
Yancey	--	--	117	260	283	76	362	440	1,538
Unit total	4,823	807	1,518	2,068	5,841	2,733	12,821	9,494	40,105

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alleghany	25	4	18	8	41	26	68	101	291
Ashe	46	4	14	27	36	24	241	167	559
Avery	2	--	--	3	35	27	88	165	320
Buncombe	10	--	1	1	56	49	231	322	670
Burke	61	5	10	34	57	30	106	185	488
Caldwell	200	22	2	--	57	25	245	198	749
Cherokee	9	--	--	--	20	29	119	172	349
Clay	--	--	--	1	11	19	50	137	218
Graham	52	10	--	6	51	102	185	558	964
Haywood	29	5	3	--	135	82	281	408	943
Henderson	76	27	9	21	33	57	310	255	788
Jackson	43	12	--	--	76	78	444	602	1,255
McDowell	90	23	4	--	65	104	402	401	1,089
Macon	64	5	9	30	55	103	418	580	1,264
Madison	112	6	11	30	66	62	305	298	890
Mitchell	--	--	--	--	42	28	82	108	260
Swain	22	3	--	--	16	30	78	111	260
Transylvania	56	27	--	--	73	112	402	493	1,163
Watauga	--	--	5	55	86	31	283	203	663
Wilkes	385	38	42	--	113	16	378	222	1,194
Yancey	--	--	47	120	42	60	321	295	885
Unit total	1,282	191	175	336	1,166	1,094	5,037	5,981	15,262

---

[1] Sound wood and bark.

Table 32.--Average annual sawtimber drain by county and species group[1]

(In million board feet)

County	Yellow pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alleghany	0.3	1.9	0.8	2.7	5.7
Ashe	0.8	5.8	1.8	5.8	14.2
Avery	0.3	1.9	1.6	4.9	8.7
Buncombe	2.9	5.2	3.3	10.8	22.2
Burke	5.3	4.5	2.0	7.3	19.1
Caldwell	4.7	9.6	1.8	7.1	23.2
Cherokee	5.4	3.5	1.6	6.1	16.6
Clay	0.5	2.2	1.0	3.4	7.1
Graham	1.7	2.9	0.9	3.5	9.0
Haywood	1.3	4.8	2.0	6.5	14.6
Henderson	2.4	4.9	1.8	6.4	15.5
Jackson	1.6	5.6	3.3	10.7	21.2
McDowell	3.8	3.3	1.8	6.3	15.2
Macon	1.6	4.0	2.2	7.8	15.6
Madison	1.9	4.9	2.2	7.3	16.3
Mitchell	0.3	1.7	1.4	4.5	7.9
Swain	1.4	1.7	1.1	3.8	8.0
Transylvania	1.7	5.7	1.8	6.6	15.8
Watauga	0.4	3.2	1.3	4.2	9.1
Wilkes	8.0	7.5	3.6	12.9	32.0
Yancey	0.4	5.1	1.5	5.0	12.0
Unit total	46.7	89.9	38.8	133.6	309.0

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 33.--Average annual drain on growing stock by county and species group[1/]

(In thousand cords)

County	Yellow pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alleghany	1	4	3	8	16
Ashe	4	11	7	17	39
Avery	2	4	6	14	26
Buncombe	14	10	12	32	68
Burke	25	9	7	22	63
Caldwell	21	19	7	21	68
Cherokee	23	7	7	20	57
Clay	3	5	4	10	22
Graham	7	6	5	11	29
Haywood	7	9	8	20	44
Henderson	12	10	7	19	48
Jackson	8	11	13	32	64
McDowell	17	7	7	19	50
Macon	8	8	10	23	49
Madison	9	10	8	22	49
Mitchell	2	3	6	13	24
Swain	7	3	4	11	25
Transylvania	9	11	8	20	48
Watauga	2	6	5	12	25
Wilkes	39	15	13	38	105
Yancey	2	10	6	15	33
Unit total	222	178	153	399	952

[1/] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is shortleaf, pitch, or Virginia pine species. In mixtures the predominating species determines the type.

White pine and spruce-fir types: Forests in which 50 percent or more of the stand is eastern white pine and hemlock, either singly or in combination, or in which 50 percent or more is in spruce and balsam fir species.

Oak-pine type: Forests in which 50 percent or more of the stand is hardwoods, usually upland oaks, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Maple-beech-birch type: Forests in which 50 percent or more of the stand is made up of hard maple, beech, or yellow birch, singly or in combination. Commonly associated species include white pine, hemlock, basswood, buckeye, and northern red oak.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of oak, hickory, yellow-poplar, soft maple, basswood, sweet birch, ash, and other hardwood species, except in cases where yellow pines made up 25 to 49 percent and the stand was classified as oak-pine type.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber. To be merchantable all saw logs must be at least 8 feet long and at least 50 percent sound. They must also meet the following requirements:

> Softwood logs[1] must have a scaling diameter of 6 inches or larger, and sweep or crook must not exceed two-thirds of the scaling diameter.
>
> Hardwood logs must have a scaling diameter of 8 inches or larger and must pass specifications[2] for standard lumber logs, or tie and timber logs.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber-size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes shortleaf, pitch, Virginia, and Table-Mountain pine.

Other softwoods: White pine, hemlock, spruce, balsam fir, and eastern redcedar.

Soft hardwoods: Blackgum, yellow-poplar, soft maple, basswood, sycamore, cucumber, and buckeye.

Hard hardwoods: All of the oaks, hickories, ash, beech, birch, hard maple, black locust, black walnut, holly, dogwood, persimmon, and sourwood.

---

[1] For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Experiment Station, 18 pp. 1953.

[2] For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, which are at least 4.0 inches in diameter inside bark, is shown separately for all sawtimber-size hardwoods.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The estimated volume of net growth includes the growth on the present growing stock, the growth on trees which died or were cut during the year, and the ingrowth resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on growth of sound trees. Growth of "other material" is not included.

> In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.
>
> In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1955 survey provided an estimate of the total forest area with a standard error of ±0.6 percent. The probabilities are two out of three that the actual forest area is within ±0.6 percent of the estimated acreage. The standard error per million acres was ±1.3 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±2.6 percent, or ±4.4 percent per billion cubic feet. Here again, the probabilities are two out of three that the actual volume does not vary from the estimated volume by more than this percentage. The error of the volume in standard cords was not computed, but it should be approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±3.6 percent.

Growth.--Estimates of timber growth are based on measurements of radial growth in sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number and size of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding date of inventory were recorded, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±11.2 percent, or ±3.0 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors on county data are shown below:

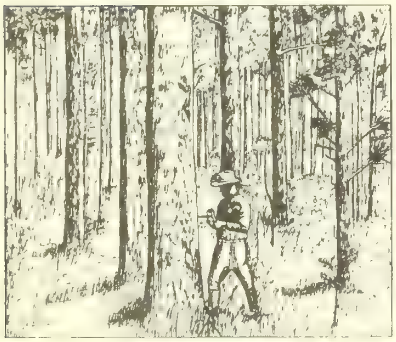
Item	Percent of error	
	Low	High
Forest area	±1.5	±7.1
Growing stock volume	±6.2	±15.6
Board-foot volume	±8.0	±20.8

HOW THE FOREST INVENTORY IS MADE

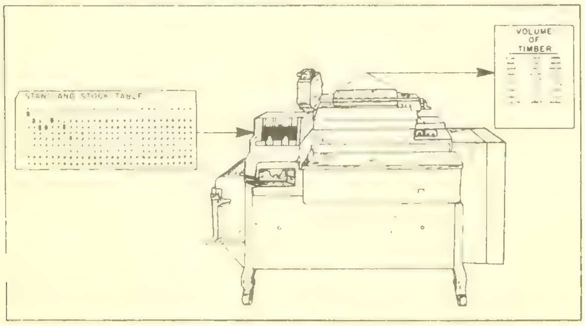
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

Forest Survey Reports Published Since 1945

Forest Statistics:

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
No. 26 - 1946 Commodity Drain by County from South Carolina Forests
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No. 30 - Forest Resources of Northeast Florida, 1949
No. 31 - Forest Resources of Central Florida, 1949
No. 32 - Forest Resources of Northwest Florida, 1949
No. 33 - Forest Resources of South Florida, 1949
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No. 37 - Forest Statistics for Southwest Georgia, 1951
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No. 44 - Forest Statistics for Georgia, 1951-53
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Pulpwood Production:

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
No. 23 - 1946 Pulpwood Production by County in the Southeast
No. 27 - 1947 Pulpwood Production by County in the Southeast
No. 29 - 1948 Pulpwood Production by County in the Southeast
*No. 35 - 1949 Pulpwood Production in the South (out of print)
*No. 69 - Pulpwood Production in the South, 1950
*No. 38 - 1951 Pulpwood Production in the South
*No. 72 - 1952 Pulpwood Production in the South
*No. 43 - 1953 Pulpwood Production in the South
*No. 76 - 1954 Pulpwood Production in the South

Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

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*Published in cooperation with the Southern Forest Experiment Station, New Orleans, La.

Agriculture--Asheville

FOREST SURVEY RELEASE NO. 47 JUNE 1956

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1955 PULPWOOD PRODUCTION IN THE SOUTH

by
James W. Cruikshank
and
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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, N. C.
and
SOUTHERN FOREST EXPERIMENT STATION
NEW ORLEANS, LA.
in cooperation with
SOUTHERN PULPWOOD CONSERVATION ASSOCIATION
ATLANTA, GA.

PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act. The Southeastern Forest Experiment Station, Asheville, North Carolina, is responsible for the work in Virginia, North Carolina, South Carolina, Georgia, and Florida. The Southern Forest Experiment Station, New Orleans, Louisiana, directs the work in Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth and mortality. Determination of the current rate of timber growth, and the total loss resulting from fire, insects, disease, suppression, and other causes.

3. Timber cut. Determination of the amount of industrial and domestic wood used, and the amount removed by land clearing and cultural operations.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

ACKNOWLEDGMENT

The statistics presented herein are based upon reports furnished by the wood procurement officials representing 73 mills located in, or drawing wood from the South. Reports showed either production by county or by shipping points which were used to assign production to counties. County data are approximate, but totals for small groups of counties should have little error.

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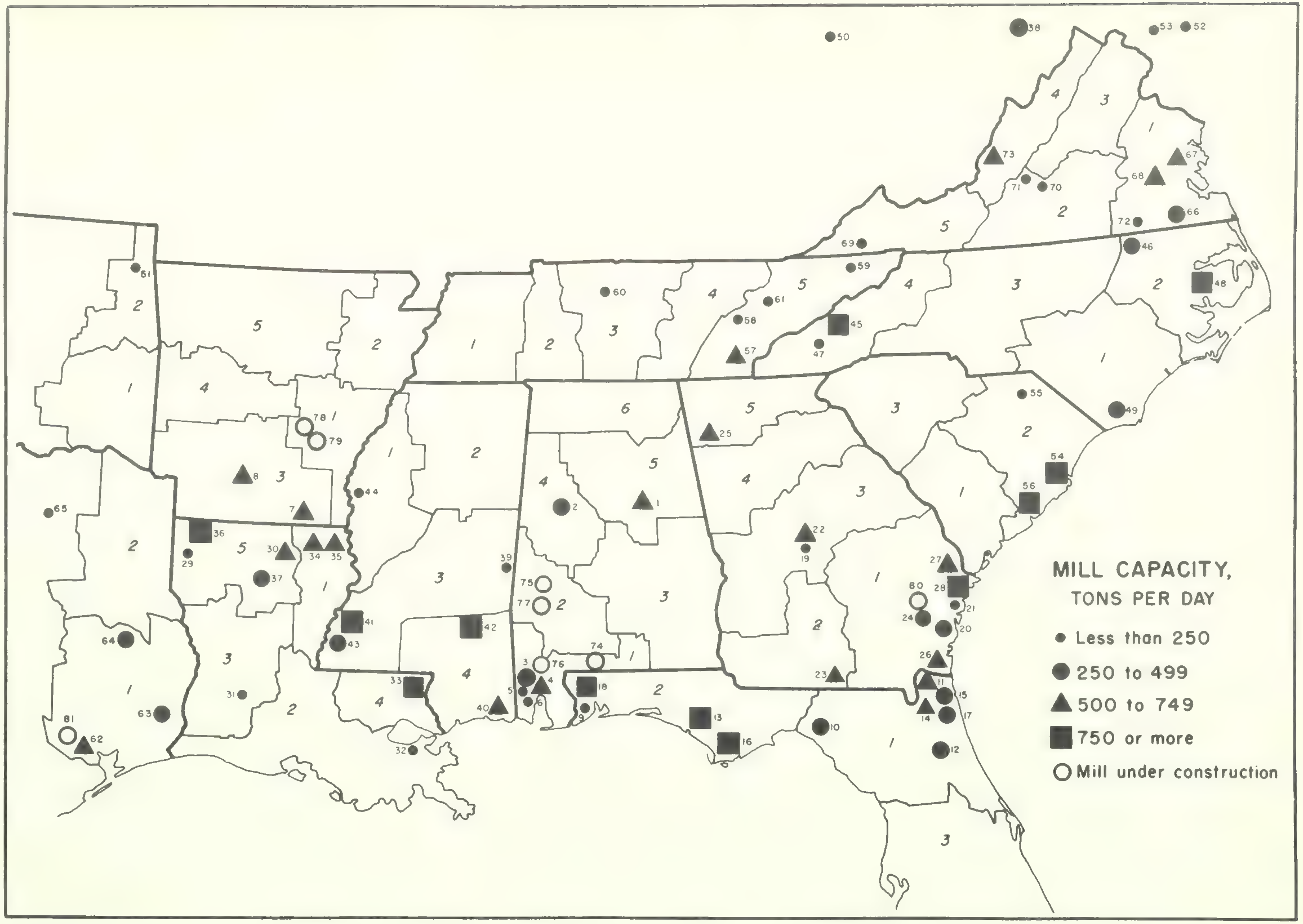


Figure 1.--Pulp mills drawing wood from the South, 1955. Numbered areas are Forest Survey units. Small numbers at mill locations correspond to numbers in tables 16 and 17.

1955 PULPWOOD PRODUCTION IN THE SOUTH

Another record high was established in pulpwood production by southern states during 1955. The total harvest amounted to 18,014,600 cords, an increase of 1,745,000 cords, or 10.7 percent, over production in 1954. The sharp upward trend of production in the South is especially apparent when compared with earlier years. The 1955 cut was about double the amount cut in 1947 and three times as great as the total production in 1940. Current activity in construction of new mills, together with installation of additional capacity in operating mills, can be expected to create new production records for many years to come.

Pine pulpwood cut in 1955 amounted to 15,487,700 cords, or 86 percent of the total. Hardwood production was 2,526,900 cords, of which 26,100 cords were chestnut. Production changes by species group over 1954 were gains of 9.8 percent in pine and 17.5 percent in hardwoods, and a decrease of 20.4 percent in chestnut. The use of blight-killed chestnut timber has been declining in recent years because of supply problems, deterioration of the remaining timber, and lack of markets for chestnut tanning extract. It is no longer an important source of raw material.

Georgia was still well in the lead over other southern states with a total production of 3-3/4 million cords (fig. 2), about one-fifth of the total production in all 12 southern states. Alabama edged ahead of

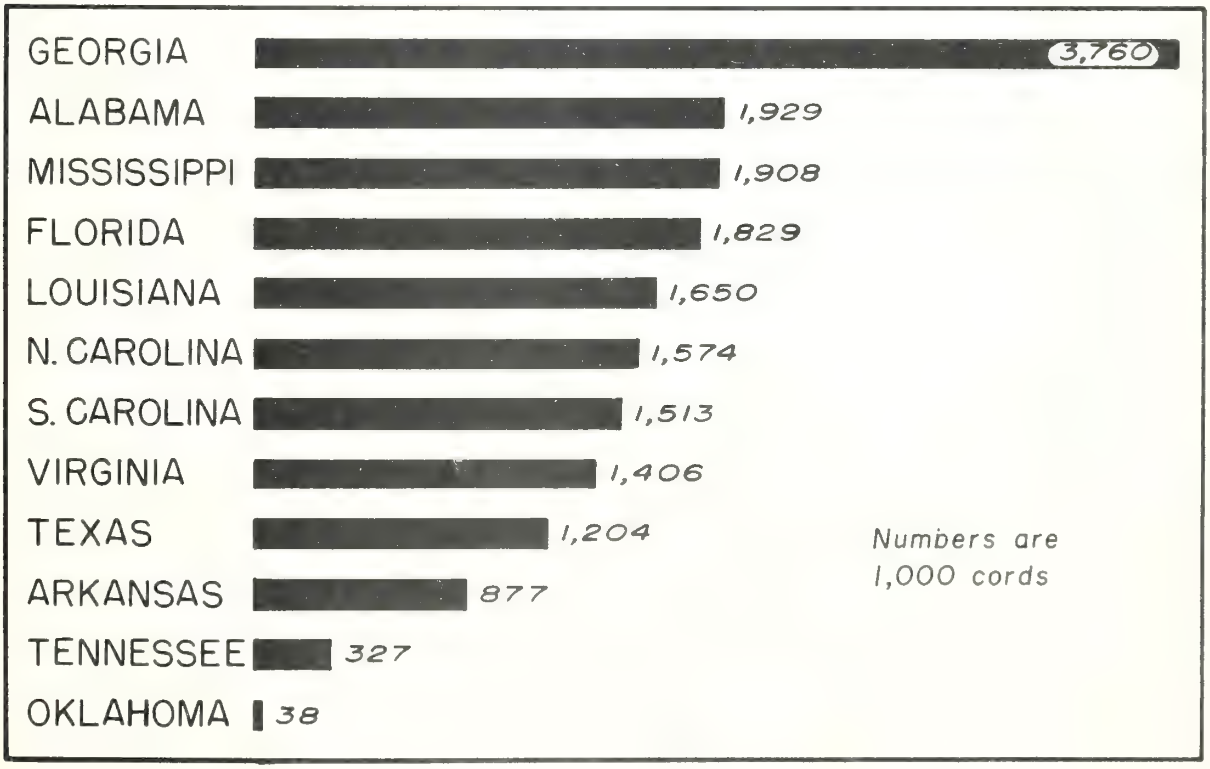


Figure 2.--Pulpwood production in the South, 1955

Mississippi, and Louisiana displaced North Carolina in state standings since 1954. Clinch County, Georgia, led in county production with the surprising total of nearly 324,000 cords (as compared to 150,000 cords in 1954). Eleven other counties or parishes in Alabama, Florida, Georgia, Louisiana, and South Carolina cut between 100,000 and 150,000 cords each.

TABLE 1.--PULPWOOD PRODUCTION IN THE SOUTH BY STATE AND SPECIES GROUP, 1954 AND 1955

(In thousand cords)

State	Percent change from 1954	1955			1954		
		Total	Pine	Hardwood 1/	Total	Pine	Hardwood 2/
Ala.	+5.3	1,928.8	1,860.1	68.7	1,831.9	1,764.9	67.0
Ark.	+6.1	877.0	782.7	94.3	826.3	725.6	100.7
Fla.	+10.0	1,828.5	1,826.9	1.6	1,661.6	1,661.2	.4
Ga.	+23.0	3,759.6	3,568.8	190.8	3,057.5	2,879.9	177.6
La.	+9.7	1,650.1	1,366.6	283.5	1,504.2	1,265.2	239.0
Miss.	-2.8	1,908.5	1,028.4	880.1	1,963.8	1,217.4	746.4
N. C.	+4.4	1,574.0	1,273.4	300.6	1,507.4	1,228.9	278.5
Okla.	+15.5	38.1	33.7	4.4	33.0	33.0	--
S. C.	+13.7	1,513.3	1,268.7	244.6	1,330.9	1,160.5	170.4
Tenn.	+35.9	326.6	220.8	105.8	240.3	134.1	106.2
Tex.	+14.2	1,203.8	1,119.5	84.3	1,054.3	1,003.6	50.7
Va.	+11.8	1,406.3	1,138.1	268.2	1,258.4	1,033.7	224.7
All	+10.7	18,014.6	15,487.7	2,526.9	16,269.6	14,108.0	2,161.6

1/ Includes 26,100 cords of chestnut used for pulp.

2/ Includes 32,800 cords of chestnut used for pulp.

The use of wood residues for pulp also made important gains. Consumption of this material, obtained from other wood-using industries, amounted to 374,132 cords. Of this total 258,909 cords, or nearly 70 percent, were pulp chips made from slabs and other coarse sawmill waste, veneer cores and cull crossties made up 107,209 cords, and miscellaneous materials, mostly pine pole and piling ends, accounted for 8,014 cords, as shown in the following summary.

	Pine	Hardwood	Total
Sawmill chips	250,591	8,318	258,909
Veneer cores, crossties	368	106,841	107,209
Miscellaneous	8,014	--	8,014
	258,973	115,159	374,132

In 1955 there were 73 pulp mills drawing wood from the South. Sixty-nine of these mills are actually located in southern states and have a current pulping capacity of 34,100 tons per day. Table 17 lists 8 additional wood-using mills for the South which are now under construction or for which definite plans have been announced.

TABLE 2.--PULPWOOD PRODUCTION IN THE SOUTHEASTERN STATION TERRITORY BY STATE AND SURVEY UNIT, 1955

State	Forest survey unit[1]	Species group			Total
		Pine	Hardwood	Chestnut	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Virginia	1	457,423	35,524	--	492,947
	2	417,829	72,260	--	490,089
	3	183,909	37,815	--	221,724
	4	69,452	110,117	--	179,569
	5	9,465	9,001	3,525	21,991
	All units	1,138,078	264,717	3,525	1,406,320
North Carolina	1	439,758	46,983	--	486,741
	2	283,894	31,771	--	315,665
	3	396,285	44,895	--	441,180
	4	153,462	172,949	3,975	330,386
	All units	1,273,399	296,598	3,975	1,573,972
South Carolina	1	244,140	76,985	--	321,125
	2	422,632	141,732	--	564,364
	3	601,935	25,889	--	627,824
	All units	1,268,707	244,606	--	1,513,313
Georgia	1	1,952,954	149,492	--	2,102,446
	2	494,875	29,481	--	524,356
	3	655,986	3,560	--	659,546
	4	362,605	2,101	--	364,706
	5	102,346	2,965	3,175	108,486
	All units	3,568,766	187,599	3,175	3,759,540
Florida	1	1,127,740	1,418	--	1,129,158
	2	487,226	142	--	487,368
	3	181,615	19	--	181,634
	4	30,381	--	--	30,381
	All units	1,826,962	1,579	--	1,828,541
All states	-	9,075,912	995,099	10,675	10,081,686

[1] For location of survey units, see fig. 1.

TABLE 3.--PULPWOOD PRODUCTION IN THE SOUTHERN STATION TERRITORY BY STATE AND SURVEY UNIT, 1955

State	Forest survey unit[1]	Species group			Total
		Pine	Hardwood	Chestnut	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Alabama	1	363,028	163	--	363,191
	2	354,971	6,269	--	361,240
	3	601,276	16,829	--	618,105
	4	183,098	19,220	--	202,318
	5	326,298	26,225	--	352,523
	6	31,444	7	--	31,451
	All units	1,860,115	68,713	--	1,928,828
Arkansas	1	16,853	22,326	--	39,179
	2	--	1,379	--	1,379
	3	641,433	65,102	--	706,535
	4	106,775	4,271	--	111,046
	5	17,654	1,206	--	18,860
	All units	782,715	94,284	--	876,999
Louisiana	1	27,963	94,099	--	122,062
	2	13,341	13,732	--	27,073
	3	354,298	35,411	--	389,709
	4	329,943	46,218	--	376,161
	5	641,083	94,064	--	735,147
	All units	1,366,628	283,524	--	1,650,152
Mississippi	1	7,672	102,630	--	110,302
	2	34,942	76,316	--	111,258
	3	567,076	529,241	--	1,096,317
	4	418,703	171,915	--	590,618
	All units	1,028,393	880,102	--	1,908,495
Oklahoma	All units	33,673	4,400	--	38,073
Tennessee	1	5,983	8,313	--	14,296
	2	472	1,172	4,580	6,224
	3	--	770	3,720	4,490
	4	42,251	37,553	7,099	86,903
	5	172,099	42,622	--	214,721
	All units	220,805	90,430	15,399	326,634
Texas	1	690,815	69,323	--	760,138
	2	412,779	11,690	--	424,469
	3	15,892	3,276	--	19,168
	All units	1,119,486	84,289	--	1,203,775
All states	-	6,411,815	1,505,742	15,399	7,932,956

[1] For location of survey units, see fig. 1.

TABLE 4.--PULPWOOD PRODUCTION IN ALABAMA, 1955

(In standard cords)

County	Pine	Hardwood	Total
Autauga	6,534	18	6,552
Baldwin	148,484	--	148,484
Barbour	36,108	--	36,108
Bibb	27,513	3,598	31,111
Blount	5,795	313	6,108
Bullock	27,109	--	27,109
Butler	38,526	431	38,957
Calhoun	13,763	1,271	15,034
Chambers	36,537	456	36,993
Cherokee	13,680	47	13,727
Chilton	17,391	1,350	18,741
Choctaw	51,474	745	52,219
Clarke	71,479	97	71,576
Clay	17,444	2,052	19,496
Cleburne	16,176	832	17,008
Coffee	27,692	--	27,692
Colbert	338	--	338
Conecuh	27,089	--	27,089
Coosa	44,683	10,426	55,109
Covington	28,494	--	28,494
Crenshaw	13,393	--	13,393
Cullman	9,298	584	9,882
Dale	9,777	--	9,777
Dallas	24,372	1,681	26,053
De Kalb	7,424	7	7,431
Elmore	33,998	150	34,148
Escambia	47,725	--	47,725
Etowah	17,880	741	18,621
Fayette	15,407	1,322	16,729
Franklin	990	--	990
Geneva	17,418	--	17,418
Greene	12,450	1,311	13,761
Hale	13,362	2,791	16,153
Henry	21,444	--	21,444
Houston	8,951	--	8,951
Jackson	4,249	--	4,249
Jefferson	17,867	214	18,081
Lamar	2,668	--	2,668
Lauderdale	1,754	--	1,754
Lawrence	2,234	--	2,234
Lee	59,703	1,041	60,744
Limestone	2,730	--	2,730
Lowndes	34,438	5,145	39,583
Macon	19,041	--	19,041
Madison	3,587	--	3,587

TABLE 4.--PULPWOOD PRODUCTION IN ALABAMA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Marengo	31,354	2,887	34,241
Marion	2,104	--	2,104
Marshall	5,692	--	5,692
Mobile	69,816	--	69,816
Monroe	79,973	98	80,071
Montgomery	38,867	1,683	40,550
Morgan	2,446	--	2,446
Perry	25,033	2,886	27,919
Pickens	35,810	1,465	37,275
Pike	33,407	--	33,407
Randolph	32,355	1,972	34,327
Russell	24,125	--	24,125
St. Clair	22,665	1,188	23,853
Shelby	53,679	3,939	57,618
Sumter	27,104	605	27,709
Talladega	28,458	1,726	30,184
Tallapoosa	72,445	4,874	77,319
Tuscaloosa	48,751	5,847	54,598
Walker	31,423	888	32,311
Washington	68,509	163	68,672
Wilcox	66,498	1,837	68,335
Winston	1,132	32	1,164
Total	1,860,115	68,713	1,928,828

TABLE 5.--PULPWOOD PRODUCTION IN ARKANSAS, 1955

(In standard cords)

County	Pine	Hardwood	Total
Arkansas	--	--	--
Ashley	56,071	9,575	65,646
Baxter	336	--	336
Benton	--	--	--
Boone	--	--	--
Bradley	37,807	6,328	44,135
Calhoun	30,419	147	30,566
Carroll	--	--	--
Chicot	--	6,152	6,152
Clark	56,549	6,932	63,481
Clay	--	--	--
Cleburne	--	--	--
Cleveland	8,781	887	9,668
Columbia	37,269	--	37,269
Conway	56	34	90

TABLE 5.--PULPWOOD PRODUCTION IN ARKANSAS, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Craighead	--	--	--
Crawford	191	58	249
Crittenden	--	1,379	1,379
Cross	--	--	--
Dallas	43,104	3,797	46,901
Desha	--	11,114	11,114
Drew	23,957	10,873	34,830
Faulkner	2,546	335	2,881
Franklin	487	--	487
Fulton	--	--	--
Garland	19,739	794	20,533
Grant	56,390	2,933	59,323
Greene	--	--	--
Hempstead	23,347	604	23,951
Hot Spring	23,756	371	24,127
Howard	11,623	775	12,398
Independence	144	--	144
Izard	--	--	--
Jackson	--	--	--
Jefferson	14,691	662	15,353
Johnson	5,434	312	5,746
Lafayette	35,218	--	35,218
Lawrence	--	--	--
Lee	--	2,049	2,049
Lincoln	1,331	25	1,356
Little River	14,867	--	14,867
Logan	8,012	--	8,012
Lonoke	14	--	14
Madison	--	--	--
Marion	--	--	--
Miller	22,804	--	22,804
Mississippi	--	--	--
Monroe	817	--	817
Montgomery	15,599	2,403	18,002
Nevada	18,415	904	19,319
Newton	--	--	--
Ouachita	30,515	4,683	35,198
Perry	7,572	--	7,572
Phillips	--	2,324	2,324
Pike	15,077	2,314	17,391
Poinsett	--	--	--
Polk	13,501	--	13,501
Pope	7,359	434	7,793
Prairie	--	--	--
Pulaski	6,484	17	6,501

TABLE 5.--PULPWOOD PRODUCTION IN ARKANSAS, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Randolph	--	--	--
St. Francis	--	--	--
Saline	25,271	1,057	26,328
Scott	1,641	--	1,641
Searcy	--	--	--
Sebastian	104	--	104
Sevier	17,301	200	17,501
Sharp	--	--	--
Stone	--	--	--
Union	78,163	13,779	91,942
Van Buren	--	--	--
Washington	--	--	--
White	1,101	33	1,134
Woodruff	--	--	--
Yell	8,852	--	8,852
Total	782,715	94,284	876,999

TABLE 6.--PULPWOOD PRODUCTION IN FLORIDA, 1955

(In standard cords)

County	Pine	Hardwood	Total
Alachua	56,150	--	56,150
Baker	76,802	--	76,802
Bay	20,649	--	20,649
Bradford	47,807	--	47,807
Brevard	16,408	--	16,408
Broward	1,000	--	1,000
Calhoun	34,193	--	34,193
Charlotte	1,272	--	1,272
Citrus	7,217	--	7,217
Clay	54,154	--	54,154
Collier	9,571	--	9,571
Columbia	80,353	224	80,577
Dade	2,636	--	2,636
De Soto	14,523	--	14,523
Dixie	21,410	--	21,410
Duval	73,093	--	73,093
Escambia	34,852	--	34,852
Flagler	68,737	--	68,737
Franklin	7,879	--	7,879
Gadsden	21,245	--	21,245

TABLE 6.--PULPWOOD PRODUCTION IN FLORIDA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Gilchrist	16,535	--	16,535
Glades	447	--	447
Gulf	19,896	--	19,896
Hamilton	46,578	--	46,578
Hardee	7,699	--	7,699
Hendry	1,123	--	1,123
Hernando	17,771	--	17,771
Highlands	4,893	--	4,893
Hillsborough	11,032	--	11,032
Holmes	28,536	--	28,536
Indian River	1,658	--	1,658
Jackson	36,956	--	36,956
Jefferson	20,172	102	20,274
Lafayette	14,247	--	14,247
Lake	9,032	--	9,032
Lee	10,781	--	10,781
Leon	37,546	--	37,546
Levy	30,247	--	30,247
Liberty	28,895	--	28,895
Madison	63,735	252	63,987
Manatee	3,709	--	3,709
Marion	58,186	--	58,186
Martin	2,033	--	2,033
Monroe	--	--	--
Nassau	73,002	64	73,066
Okaloosa	23,637	--	23,637
Okeechobee	6,801	--	6,801
Orange	7,382	--	7,382
Osceola	9,046	--	9,046
Palm Beach	1,518	--	1,518
Pasco	11,546	19	11,565
Pinellas	109	--	109
Polk	16,786	--	16,786
Putnam	67,901	--	67,901
St. Johns	60,537	--	60,537
St. Lucie	1,783	--	1,783
Santa Rosa	110,054	--	110,054
Sarasota	9,682	--	9,682
Seminole	5,630	--	5,630
Sumter	18,908	--	18,908
Suwannee	19,493	--	19,493
Taylor	93,518	878	94,396
Union	45,151	--	45,151
Volusia	60,104	--	60,104
Wakulla	15,578	40	15,618
Walton	19,998	--	19,998
Washington	27,140	--	27,140
Total	1,826,962	1,579	1,828,541

TABLE 7.--PULPWOOD PRODUCTION IN GEORGIA, 1955

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Appling	86,266	2,167	--	88,433
Atkinson	35,803	119	--	35,922
Bacon	37,949	1,480	--	39,429
Baker	10,849	--	--	10,849
Baldwin	12,830	782	--	13,612
Banks	3,270	--	--	3,270
Barrow	2,326	--	--	2,326
Bartow	16,416	--	--	16,416
Ben Hill	16,843	1,658	--	18,501
Berrien	38,504	231	--	38,735
Bibb	8,920	--	--	8,920
Bleckley	4,454	1,710	--	6,164
Brantley	97,300	4,842	--	102,142
Brooks	19,593	157	--	19,750
Bryan	53,772	6,464	--	60,236
Bulloch	43,865	5,435	--	49,300
Burke	9,155	--	--	9,155
Butts	15,371	--	--	15,371
Calhoun	7,762	--	--	7,762
Camden	75,995	10,376	--	86,371
Candler	9,898	37	--	9,935
Carroll	14,843	--	--	14,843
Catoosa	1,823	--	--	1,823
Charlton	144,360	--	--	144,360
Chatham	19,437	11,322	--	30,759
Chattahoochee	8,392	--	--	8,392
Chattooga	3,029	--	--	3,029
Cherokee	4,591	--	--	4,591
Clarke	2,072	--	--	2,072
Clay	3,623	--	--	3,623
Clayton	7,294	1,082	--	8,376
Clinch	323,464	275	--	323,739
Cobb	3,749	--	--	3,749
Coffee	69,941	991	--	70,932
Colquitt	24,129	--	--	24,129
Columbia	16,179	--	--	16,179
Cook	13,130	37	--	13,167
Coweta	19,715	--	--	19,715
Crawford	18,446	--	--	18,446
Crisp	20,182	--	--	20,182
Dade	2,043	--	--	2,043
Dawson	140	--	--	140
Decatur	38,412	10,487	--	48,899
De Kalb	4,746	--	--	4,746
Dodge	27,492	2,929	--	30,421

TABLE 7.--PULPWOOD PRODUCTION IN GEORGIA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Dooly	6,860	69	--	6,929
Dougherty	10,781	--	--	10,781
Douglas	11,332	--	--	11,332
Early	13,339	1,773	--	15,112
Echols	74,256	71	--	74,327
Effingham	45,482	9,178	--	54,660
Elbert	27,076	1,019	--	28,095
Emanuel	41,357	1,518	--	42,875
Evans	18,270	189	--	18,459
Fannin	3,289	1,309	3,175	7,773
Fayette	5,746	--	--	5,746
Floyd	20,755	--	--	20,755
Forsyth	2,250	--	--	2,250
Franklin	12,987	--	--	12,987
Fulton	7,317	--	--	7,317
Gilmer	3,169	1,656	--	4,825
Glascock	735	--	--	735
Glynn	35,151	33,302	--	68,453
Gordon	10,109	--	--	10,109
Grady	26,116	1,365	--	27,481
Greene	34,834	221	--	35,055
Gwinnett	8,076	--	--	8,076
Habersham	4,632	--	--	4,632
Hall	18,898	--	--	18,898
Hancock	20,265	--	--	20,265
Haralson	4,595	--	--	4,595
Harris	38,344	--	--	38,344
Hart	2,333	--	--	2,333
Heard	5,164	--	--	5,164
Henry	11,890	--	--	11,890
Houston	12,794	447	--	13,241
Irwin	20,278	2,351	--	22,629
Jackson	15,136	--	--	15,136
Jasper	19,972	--	--	19,972
Jeff Davis	71,024	197	--	71,221
Jefferson	7,753	--	--	7,753
Jenkins	9,271	1,350	--	10,621
Johnson	10,585	--	--	10,585
Jones	34,885	62	--	34,947
Lamar	8,389	--	--	8,389
Lanier	12,997	--	--	12,997
Laurens	19,111	179	--	19,290
Lee	3,420	--	--	3,420
Liberty	57,789	15,526	--	73,315
Lincoln	8,562	--	--	8,562

TABLE 7.--PULPWOOD PRODUCTION IN GEORGIA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Long	54,863	1,857	--	56,720
Lowndes	66,392	34	--	66,426
Lumpkin	--	--	--	--
McDuffie	5,800	--	--	5,800
McIntosh	24,320	12,831	--	37,151
Macon	9,605	--	--	9,605
Madison	9,763	--	--	9,763
Marion	10,640	--	--	10,640
Meriwether	43,972	--	--	43,972
Miller	9,230	--	--	9,230
Mitchell	34,979	1,409	--	36,388
Monroe	42,034	--	--	42,034
Montgomery	19,390	2,789	--	22,179
Morgan	17,969	--	--	17,969
Murray	4,526	--	--	4,526
Muscogee	8,567	--	--	8,567
Newton	13,538	--	--	13,538
Oconee	7,993	--	--	7,993
Oglethorpe	12,554	--	--	12,554
Paulding	5,848	--	--	5,848
Peach	6,770	--	--	6,770
Pickens	5,569	--	--	5,569
Pierce	43,246	910	--	44,156
Pike	4,747	--	--	4,747
Polk	12,411	--	--	12,411
Pulaski	4,436	142	--	4,578
Putnam	11,403	18	--	11,421
Quitman	9,096	--	--	9,096
Rabun	6,199	--	--	6,199
Randolph	8,309	--	--	8,309
Richmond	3,539	--	--	3,539
Rockdale	5,526	--	--	5,526
Schley	6,485	--	--	6,485
Screven	32,757	2,791	--	35,548
Seminole	18,508	5,469	--	23,977
Spalding	9,069	--	--	9,069
Stephens	5,091	--	--	5,091
Stewart	18,635	--	--	18,635
Sumter	8,899	110	--	9,009
Talbot	23,510	--	--	23,510
Taliaferro	6,590	68	--	6,658
Tattnall	46,132	500	--	46,632
Taylor	14,179	--	--	14,179
Telfair	50,010	2,379	--	52,389
Terrell	1,436	--	--	1,436

TABLE 7.--PULPWOOD PRODUCTION IN GEORGIA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Thomas	23,085	1,872	--	24,957
Tift	9,229	--	--	9,229
Toombs	32,777	5,588	--	38,365
Towns	--	--	--	--
Treutlen	20,468	--	--	20,468
Troup	47,706	--	--	47,706
Turner	17,003	1,429	--	18,432
Twiggs	15,603	--	--	15,603
Union	740	--	--	740
Upson	21,436	--	--	21,436
Walker	2,664	--	--	2,664
Walton	3,410	--	--	3,410
Ware	91,700	189	--	91,889
Warren	9,952	--	--	9,952
Washington	25,040	--	--	25,040
Wayne	100,352	10,334	--	110,686
Webster	4,202	--	--	4,202
Wheeler	32,609	1,377	--	33,986
White	--	--	--	--
Whitfield	7,561	--	--	7,561
Wilcox	16,754	634	--	17,388
Wilkes	30,709	--	--	30,709
Wilkinson	17,021	--	--	17,021
Worth	38,463	506	--	38,969
Total	3,568,766	187,599	3,175	3,759,540

TABLE 8.--PULPWOOD PRODUCTION IN LOUISIANA, 1955

(In standard cords)

Parish	Pine	Hardwood	Total
Acadia	7,016	100	7,116
Allen	27,423	4,160	31,583
Ascension	--	--	--
Assumption	--	--	--
Avoyelles	4,703	545	5,248
Beauregard	18,740	1,196	19,936
Bienville	69,436	2,569	72,005
Bossier	36,806	5,760	42,566
Caddo	16,660	4,875	21,535
Calcasieu	15,950	276	16,226

TABLE 8.--PULPWOOD PRODUCTION IN LOUISIANA, 1955 (continued)

(In standard cords)

Parish	Pine	Hardwood	Total
Caldwell	21,661	4,293	25,954
Cameron	--	--	--
Catahoula	9,465	11,457	20,922
Claiborne	52,808	399	53,207
Concordia	10	29,158	29,168
De Soto	51,570	--	51,570
East Baton Rouge	141	4,461	4,602
East Carroll	--	5,501	5,501
East Feliciana	12,528	12,375	24,903
Evangeline	16,822	945	17,767
Franklin	556	6,546	7,102
Grant	30,751	3,255	34,006
Iberia	--	--	--
Iberville	--	--	--
Jackson	50,176	1,886	52,062
Jefferson	--	--	--
Jefferson Davis	3,124	328	3,452
Lafayette	--	--	--
Lafourche	--	--	--
La Salle	28,275	10,900	39,175
Lincoln	34,364	4,422	38,786
Livingston	96,303	16,299	112,602
Madison	--	9,651	9,651
Morehouse	17,276	4,983	22,259
Natchitoches	65,885	8,252	74,137
Orleans	--	--	--
Ouachita	30,079	9,506	39,585
Plaquemines	--	--	--
Pointe Coupee	--	4,436	4,436
Rapides	43,983	5,713	49,696
Red River	22,603	--	22,603
Richland	43	1,165	1,208
Sabine	70,580	--	70,580
St. Bernard	--	--	--
St. Charles	--	--	--
St. Helena	18,804	1,827	20,631
St. James	--	--	--
St. John the Baptist	--	--	--
St. Landry	297	12	309
St. Martin	--	--	--
St. Mary	--	216	216
St. Tammany	33,383	432	33,815
Tangipahoa	68,040	5,678	73,718
Tensas	459	22,717	23,176
Terrebonne	--	--	--

TABLE 8.--PULPWOOD PRODUCTION IN LOUISIANA, 1955 (continued)

(In standard cords)

Parish	Pine	Hardwood	Total
Union	98,944	37,588	136,532
Vermilion	--	--	--
Vernon	32,765	386	33,151
Washington	100,744	5,146	105,890
Webster	30,687	6,992	37,679
West Baton Rouge	--	--	--
West Carroll	154	2,921	3,075
West Feliciana	1,325	8,423	9,748
Winn	125,289	15,774	141,063
Total	1,366,628	283,524	1,650,152

TABLE 9.--PULPWOOD PRODUCTION IN MISSISSIPPI, 1955

(In standard cords)

County	Pine	Hardwood	Total
Adams	4,976	20,352	25,328
Alcorn	2,142	2,533	4,675
Amite	13,586	24,385	37,971
Attala	14,803	35,232	50,035
Benton	520	--	520
Bolivar	--	5,147	5,147
Calhoun	28	736	764
Carroll	633	8,707	9,340
Chickasaw	695	328	1,023
Choctaw	10,435	18,361	28,796
Claiborne	7,715	19,570	27,285
Clarke	55,734	28,448	84,182
Clay	17	9	26
Coahoma	--	2,354	2,354
Copiah	31,636	55,592	87,228
Covington	15,432	10,055	25,487
De Soto	--	668	668
Forrest	35,710	11,700	47,410
Franklin	32,670	19,181	51,851
George	17,019	2,580	19,599
Greene	43,692	6,462	50,154
Grenada	798	7,292	8,090
Hancock	33,825	--	33,825
Harrison	31,511	1,155	32,666
Hinds	9,160	27,838	36,998

TABLE 9.--PULPWOOD PRODUCTION IN MISSISSIPPI, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Holmes	6,854	32,162	39,016
Humphreys	--	2,785	2,785
Issaquena	--	5,388	5,388
Itawamba	94	--	94
Jackson	41,323	--	41,323
Jasper	55,176	36,991	92,167
Jefferson	14,237	25,710	39,947
Jefferson Davis	4,948	1,291	6,239
Jones	30,999	42,834	73,833
Kemper	18,963	3,842	22,805
Lafayette	1,284	2,942	4,226
Lamar	14,217	5,604	19,821
Lauderdale	43,813	19,892	63,705
Lawrence	29,236	27,760	56,996
Leake	19,621	16,521	36,142
Lee	238	--	238
Leflore	52	6,083	6,135
Lincoln	26,401	24,365	50,766
Lowndes	1,199	13	1,212
Madison	7,897	18,030	25,927
Marion	29,587	15,862	45,449
Marshall	442	389	831
Monroe	209	107	316
Montgomery	1,378	12,739	14,117
Neshoba	13,540	11,309	24,849
Newton	34,115	18,133	52,248
Noxubee	8,221	1,953	10,174
Oktibbeha	3,225	7,658	10,883
Panola	--	1,454	1,454
Pearl River	20,758	11,599	32,357
Perry	14,753	8,696	23,449
Pike	28,248	27,964	56,212
Pontotoc	1,736	74	1,810
Prentiss	785	--	785
Quitman	--	362	362
Rankin	27,687	23,693	51,380
Scott	36,112	23,445	59,557
Sharkey	2	15,269	15,271
Simpson	25,000	12,559	37,559
Smith	8,174	8,194	16,368
Stone	17,983	2,739	20,722
Sunflower	--	151	151
Tallahatchie	3	1,493	1,496
Tate	116	177	293
Tippah	112	--	112

TABLE 9.--PULPWOOD PRODUCTION IN MISSISSIPPI, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Tishomingo	3,853	2,955	6,808
Tunica	--	1,625	1,625
Union	986	--	986
Walthall	13,559	12,444	26,003
Warren	459	14,579	15,038
Washington	--	5,667	5,667
Wayne	24,151	11,134	35,285
Webster	3,150	5,183	8,333
Wilkinson	12,460	19,245	31,705
Winston	17,131	6,797	23,928
Yalobusha	867	3,991	4,858
Yazoo	302	9,565	9,867
Total	1,028,393	880,102	1,908,495

TABLE 10.--PULPWOOD PRODUCTION IN NORTH CAROLINA, 1955

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Alamance	4,671	817	--	5,488
Alexander	2,279	--	--	2,279
Alleghany	38	--	--	38
Anson	22,248	4,737	-	26,985
Ashe	--	241	--	241
Avery	--	239	60	299
Beaufort	15,252	2,307	--	17,559
Bertie	22,106	2,460	--	24,566
Bladen	38,260	9,500	--	47,760
Brunswick	47,705	6,567	--	54,272
Buncombe	30,318	44,900	1,885	77,103
Burke	21,650	8,488	--	30,138
Cabarrus	4,005	85	--	4,090
Caldwell	10,429	17	--	10,446
Camden	--	--	--	--
Carteret	25,952	--	--	25,952
Caswell	5,091	--	--	5,091
Catawba	6,921	--	--	6,921
Chatham	24,414	1,837	--	26,251
Cherokee	19,687	11,202	--	30,889

TABLE 10.--PULPWOOD PRODUCTION IN NORTH CAROLINA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Chowan	1,072	1,340	--	2,412
Clay	--	--	--	--
Cleveland	5,542	--	--	5,542
Columbus	67,742	8,611	--	76,353
Craven	44,881	2,516	--	47,397
Cumberland	15,323	119	--	15,442
Currituck	--	--	--	--
Dare	--	--	--	--
Davidson	936	--	--	936
Davie	5,588	162	--	5,750
Duplin	26,192	752	--	26,944
Durham	17,729	821	--	18,550
Edgecombe	6,974	310	--	7,284
Forsyth	812	--	--	812
Franklin	39,011	8,504	--	47,515
Gaston	7,862	540	--	8,402
Gates	21,319	3,800	--	25,119
Graham	1,070	--	--	1,070
Granville	21,505	375	--	21,880
Greene	197	--	--	197
Guilford	890	--	--	890
Halifax	42,363	4,815	--	47,178
Harnett	10,945	1,542	--	12,487
Haywood	10,014	23,086	--	33,100
Henderson	13,530	19,876	--	33,406
Hertford	24,028	4,850	--	28,878
Hoke	1,426	800	--	2,226
Hyde	--	--	--	--
Iredell	19,574	5,622	--	25,196
Jackson	10,754	19,900	--	30,654
Johnston	9,031	829	--	9,860
Jones	27,766	2,000	--	29,766
Lee	11,222	1,886	--	13,108
Lenoir	7,756	51	--	7,807
Lincoln	7,631	119	--	7,750
McDowell	10,950	6,256	--	17,206
Macon	74	11,250	--	11,324
Madison	6,577	4,642	670	11,889
Martin	14,096	1,536	--	15,632
Mecklenburg	10,707	410	--	11,117
Mitchell	--	4,144	1,360	5,504
Montgomery	11,681	1,396	--	13,077
Moore	11,913	1,180	--	13,093
Nash	3,533	17	--	3,550
New Hanover	9,029	500	--	9,529

TABLE 10.--PULPWOOD PRODUCTION IN NORTH CAROLINA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Northampton	22,184	3,892	--	26,076
Onslow	37,938	289	--	38,227
Orange	9,438	1,015	--	10,453
Pamlico	9,200	500	--	9,700
Pasquotank	--	--	--	--
Pender	34,150	1,820	--	35,970
Perquimans	--	--	--	--
Person	6,354	--	--	6,354
Pitt	4,043	--	--	4,043
Polk	1,491	4,142	--	5,633
Randolph	4,564	--	--	4,564
Richmond	13,760	407	--	14,167
Robeson	18,995	3,472	--	22,467
Rockingham	4,670	--	--	4,670
Rowan	5,230	68	--	5,298
Rutherford	20,359	8,308	--	28,667
Sampson	30,263	3,471	--	33,734
Scotland	2,003	2,500	--	4,503
Stanly	4,979	913	--	5,892
Stokes	327	--	--	327
Surry	27,011	--	--	27,011
Swain	7,642	7,491	--	15,133
Transylvania	3,572	9,651	--	13,223
Tyrrell	3,000	--	--	3,000
Union	26,475	906	--	27,381
Vance	7,274	521	--	7,795
Wake	35,278	1,735	--	37,013
Warren	23,738	1,862	--	25,600
Washington	20,400	3,118	--	23,518
Watauga	--	--	--	--
Wayne	18,142	687	--	18,829
Wilkes	7,157	--	--	7,157
Wilson	3,491	310	--	3,801
Yadkin	--	--	--	--
Yancey	--	1,566	--	1,566
Total	1,273,399	296,598	3,975	1,573,972

TABLE 11.--PULPWOOD PRODUCTION IN OKLAHOMA, 1955

(In standard cords)

County[1]	Pine	Hardwood	Total
Choctaw	1,893	--	1,893
Haskell	990	--	990
Latimer	249	--	249
Le Flore	10,028	--	10,028
McCurtain	15,832	--	15,832
Mayes	--	4,400	4,400
Pushmataha	4,681	--	4,681
Total	33,673	4,400	38,073

[1] Counties with no pulpwood production are omitted.

TABLE 12.--PULPWOOD PRODUCTION IN SOUTH CAROLINA, 1955

(In standard cords)

County	Pine	Hardwood	Total
Abbeville	37,388	862	38,250
Aiken	11,671	107	11,778
Allendale	28,891	6,533	35,424
Anderson	17,349	380	17,729
Bamberg	10,761	5,479	16,240
Barnwell	5,218	2,072	7,290
Beaufort	13,310	2,829	16,139
Berkeley	56,348	18,333	74,681
Calhoun	8,000	1,389	9,389
Charleston	36,948	11,040	47,988
Cherokee	16,748	579	17,327
Chester	47,637	1,605	49,242
Chesterfield	20,690	26,893	47,583
Clarendon	14,262	2,186	16,448
Colleton	33,778	11,680	45,458
Darlington	16,045	9,669	25,714
Dillon	11,672	3,607	15,279
Dorchester	29,434	17,941	47,375
Edgefield	23,013	458	23,471
Fairfield	102,461	8,692	111,153
Florence	17,237	1,869	19,106
Georgetown	80,071	23,135	103,206
Greenville	26,910	131	27,041
Greenwood	27,539	795	28,334
Hampton	40,940	7,419	48,359

TABLE 12.--PULPWOOD PRODUCTION IN SOUTH CAROLINA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Horry	43,593	3,967	47,560
Jasper	32,442	12,750	45,192
Kershaw	41,075	13,791	54,866
Lancaster	34,049	478	34,527
Laurens	37,955	1,137	39,092
Lee	4,857	3,942	8,799
Lexington	9,123	1,962	11,085
McCormick	20,183	697	20,880
Marion	12,136	2,759	14,895
Marlboro	7,745	4,376	12,121
Newberry	54,409	6,506	60,915
Oconee	18,486	17	18,503
Orangeburg	20,572	6,824	27,396
Pickens	11,615	--	11,615
Richland	22,833	8,747	31,580
Saluda	14,835	62	14,897
Spartanburg	35,858	1,451	37,309
Sumter	14,714	1,844	16,558
Union	38,351	2,719	41,070
Williamsburg	21,998	4,877	26,875
York	37,557	17	37,574
Total	1,268,707	244,606	1,513,313

TABLE 13.--PULPWOOD PRODUCTION IN TENNESSEE, 1955

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Anderson	9,191	2,224	--	11,415
Bedford	--	4	240	244
Benton	--	--	--	--
Bledsoe	657	--	--	657
Blount	10,873	1,408	--	12,281
Bradley	9,537	1,062	--	10,599
Campbell	3,817	3,253	--	7,070
Cannon	--	--	--	--
Carroll	--	--	--	--
Carter	17	1,228	--	1,245
Cheatham	--	62	--	62
Chester	--	--	--	--
Claiborne	3,799	6,790	--	10,589
Clay	--	--	--	--
Cocke	10,503	1,342	--	11,845

TABLE 13.--PULPWOOD PRODUCTION IN TENNESSEE, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Coffee	--	121	2,700	2,821
Crockett	--	--	--	--
Cumberland	2,922	11,950	--	14,872
Davidson	--	375	--	375
Decatur	255	--	--	255
De Kalb	--	--	--	--
Dickson	--	63	--	63
Dyer	--	--	--	--
Fayette	438	--	--	438
Fentress	4,884	--	--	4,884
Franklin	40	--	170	210
Gibson	--	--	--	--
Giles	--	--	10	10
Grainger	1,974	611	--	2,585
Greene	1,657	198	--	1,855
Grundy	2,606	--	--	2,606
Hamblen	1,098	--	--	1,098
Hamilton	13,000	--	--	13,000
Hancock	1,095	5	--	1,100
Hardeman	1,367	312	--	1,679
Hardin	165	--	--	165
Hawkins	5,573	1,241	--	6,814
Haywood	--	--	--	--
Henderson	3,970	--	--	3,970
Henry	--	--	--	--
Hickman	--	--	650	650
Houston	--	--	--	--
Humphreys	--	--	50	50
Jackson	--	--	--	--
Jefferson	774	822	--	1,596
Johnson	--	118	--	118
Knox	9,895	2,367	--	12,262
Lake	--	--	--	--
Lauderdale	--	--	--	--
Lawrence	--	1,172	3,730	4,902
Lewis	48	--	150	198
Lincoln	--	--	260	260
Loudon	5,493	352	--	5,845
McMinn	24,741	6,931	--	31,672
McNairy	190	--	--	190
Macon	--	--	--	--
Madison	18	--	--	18
Marion	2,705	--	--	2,705
Marshall	--	--	--	--
Maury	--	--	--	--

TABLE 13.--PULPWOOD PRODUCTION IN TENNESSEE, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Meigs	2,828	--	--	2,828
Monroe	16,898	2,138	--	19,036
Montgomery	--	--	--	--
Moore	--	--	--	--
Morgan	7,928	6,134	--	14,062
Obion	--	--	--	--
Overton	256	2,060	--	2,316
Perry	4	--	--	4
Pickett	--	--	--	--
Polk	11,458	2,285	--	13,743
Putnam	657	4,273	3,819	8,749
Rhea	11,325	1,763	--	13,088
Roane	5,008	3,192	--	8,200
Robertson	--	--	--	--
Rutherford	--	--	20	20
Scott	11,050	9,739	--	20,789
Sequatchie	4,511	--	--	4,511
Sevier	5,597	704	--	6,301
Shelby	--	8,001	--	8,001
Smith	--	--	--	--
Stewart	--	--	--	--
Sullivan	--	1,108	--	1,108
Sumner	--	--	490	490
Tipton	--	--	--	--
Trousdale	--	--	--	--
Unicoi	--	1,333	--	1,333
Union	8,884	2,974	--	11,858
Van Buren	32	--	--	32
Warren	154	144	1,560	1,858
Washington	881	426	--	1,307
Wayne	--	--	--	--
Weakley	--	--	--	--
White	32	--	1,550	1,582
Williamson	--	145	--	145
Wilson	--	--	--	--
Total	220,805	90,430	15,399	326,634

TABLE 14.--PULPWOOD PRODUCTION IN TEXAS, 1955

(In standard cords)

County[1]	Pine	Hardwood	Total
Anderson	11,757	1,694	13,451
Angelina	53,453	841	54,294
Bastrop	1,564	307	1,871
Bowie	10,671	--	10,671
Camp	3,344	--	3,344
Cass	34,508	--	34,508
Cherokee	43,680	1,757	45,437
Franklin	5,536	--	5,536
Gregg	21,520	1,436	22,956
Grimes	11,842	2,169	14,011
Hardin	37,139	4,498	41,637
Harris	23,586	3,486	27,072
Harrison	42,245	--	42,245
Henderson	1,237	174	1,411
Houston	52,233	2,842	55,075
Jasper	70,341	12,006	82,347
Jefferson	2,217	52	2,269
Lamar	94	--	94
Leon	1,066	604	1,670
Liberty	44,263	6,232	50,495
Marion	24,040	--	24,040
Montgomery	71,522	9,014	80,536
Morris	8,091	--	8,091
Nacogdoches	54,897	1,137	56,034
Newton	48,251	5,650	53,901
Orange	16,451	140	16,591
Panola	42,010	838	42,848
Polk	47,244	3,621	50,865
Red River	1,693	--	1,693
Rusk	15,631	1,044	16,675
Sabine	24,085	1,421	25,506
San Augustine	44,405	2,096	46,501
San Jacinto	11,322	2,053	13,375
Shelby	49,004	2,703	51,707
Smith	7,953	847	8,800
Titus	1,331	--	1,331
Trinity	42,298	2,674	44,972
Tyler	56,355	4,904	61,259
Upshur	27,996	--	27,996
Walker	45,650	7,793	53,443
Waller	89	22	111
Wood	6,872	234	7,106
Total	1,119,486	84,289	1,203,775

[1] Counties with no pulpwood production are omitted.

TABLE 15.--PULPWOOD PRODUCTION IN VIRGINIA, 1955

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Accomack	9,536	--	--	9,536
Albemarle	40,630	2,906	--	43,536
Alleghany	9,018	31,082	--	40,100
Amelia	46,310	1,643	--	47,953
Amherst	40,717	17,679	--	58,396
Appomattox	19,083	6,155	--	25,238
Arlington	--	--	--	--
Augusta	5,345	2,978	--	8,323
Bath	5,769	28,032	--	33,801
Bedford	38,694	15,842	--	54,536
Bland	--	--	--	--
Botetourt	12,927	11,798	--	24,725
Brunswick	59,177	7,917	--	67,094
Buchanan	--	--	--	--
Buckingham	40,921	24,333	--	65,254
Campbell	48,054	6,542	--	54,596
Caroline	6,469	26	--	6,495
Carroll	82	--	--	82
Charles City	13,877	--	--	13,877
Charlotte	35,729	620	--	36,349
Chesterfield	9,310	470	--	9,780
Clarke	18	9	--	27
Craig	5,765	8,040	--	13,805
Culpeper	7,602	4,088	--	11,690
Cumberland	31,347	1,119	--	32,466
Dickenson	--	60	--	60
Dinwiddie	38,891	3,261	--	42,152
Elizabeth City	--	--	--	--
Essex	4,179	--	--	4,179
Fairfax	436	2	--	438
Fauquier	1,146	8	--	1,154
Floyd	--	--	--	--
Fluvanna	15,926	2,611	--	18,537
Franklin	12,182	47	--	12,229
Frederick	4,342	548	--	4,890
Giles	69	74	--	143
Gloucester	18,722	--	--	18,722
Goochland	18,917	5,655	--	24,572
Grayson	167	--	--	167
Greene	575	22	--	597
Greensville	36,688	2,508	--	39,196
Halifax	19,551	698	--	20,249
Hanover	3,987	461	--	4,448
Henrico	4,981	--	--	4,981
Henry	7,223	--	--	7,223

TABLE 15.--PULPWOOD PRODUCTION IN VIRGINIA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Highland	1,265	7,063	--	8,328
Isle of Wight	11,345	2,721	--	14,066
James City	10,188	--	--	10,188
King and Queen	27,622	--	--	27,622
King George	1,341	--	--	1,341
King William	19,620	--	--	19,620
Lancaster	7,863	--	--	7,863
Lee	--	2,027	270	2,297
Loudoun	--	--	--	--
Louisa	22,058	801	--	22,859
Lunenburg	9,718	552	--	10,270
Madison	1,233	--	--	1,233
Mathews	3,518	--	--	3,518
Mecklenburg	14,190	517	--	14,707
Middlesex	7,921	--	--	7,921
Montgomery	3,191	--	1,215	4,406
Nansemond	10,284	5,392	--	15,676
Nelson	18,194	2,169	--	20,363
New Kent	18,725	811	--	19,536
Norfolk	13,248	873	--	14,121
Northampton	2	114	--	116
Northumberland	164	--	--	164
Nottoway	18,405	7,266	--	25,671
Orange	4,409	1,611	--	6,020
Page	580	57	--	637
Patrick	--	--	--	--
Pittsylvania	24,997	2	--	24,999
Powhatan	15,398	1,021	--	16,419
Prince Edward	36,027	5,903	--	41,930
Prince George	21,956	100	--	22,056
Prince William	7,794	22	--	7,816
Princess Anne	67	25	--	92
Pulaski	72	--	--	72
Rappahannock	21	--	--	21
Richmond	9,821	--	--	9,821
Roanoke	984	--	--	984
Rockbridge	12,387	20,160	--	32,547
Rockingham	2,965	234	--	3,199
Russell	--	400	--	400
Scott	--	4,740	810	5,550
Shenandoah	2,431	24	--	2,455
Smyth	--	77	--	77
Southampton	27,299	8,793	--	36,092
Spotsylvania	3,203	--	--	3,203
Stafford	1,048	241	--	1,289

TABLE 15.--PULPWOOD PRODUCTION IN VIRGINIA, 1955 (continued)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Surry	9,740	307	--	10,047
Sussex	29,877	1,745	--	31,622
Tazewell	--	--	--	--
Warren	5,656	92	--	5,748
Warwick	926	--	--	926
Washington	708	1,314	670	2,692
Westmoreland	4,999	--	--	4,999
Wise	--	309	560	869
Wythe	5,176	--	--	5,176
York	15,080	--	--	15,080
Total	1,138,078	264,717	3,525	1,406,320

TABLE 16.--COMPANIES DRAWING PULPWOOD FROM THE SOUTH, 1955

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
ALABAMA		
Coosa Pines	(1) Coosa River Newsprint Co.	555
Tuscaloosa	(2) Gulf States Paper Corp.	400
Mobile	(3) Hollingsworth and Whitney Co.	420
Mobile	(4) International Paper Co.	610
Mobile	(5) National Gypsum Co.	150
Mobile	(6) Ruberoid Co.	53
ARKANSAS		
Crossett	(7) The Crossett Co.	620
Camden	(8) International Paper Co.	600
FLORIDA		
Pensacola	(9) Armstrong Cork Co.	130
Perry	(10) The Buckeye Cellulose Corp.	300
Fernandina	(11) Container Corp. of America	500
Palatka	(12) Hudson Pulp and Paper Corp.	400
Panama City	(13) International Paper Co.	1,550
Jacksonville	(14) National Container Corp.	500
Fernandina	(15) Rayonier, Inc.	350
Port St. Joe	(16) St. Joe Paper Co.	1,200
Jacksonville	(17) St. Regis Paper Co.	370
Pensacola	(18) St. Regis Paper Co.	750
GEORGIA		
Macon	(19) Armstrong Cork Co.	200
Brunswick	(20) Brunswick Pulp and Paper Co.	460
Savannah	(21) Certain-teed Products Corp.	60
Macon	(22) Macon Kraft Co.	675
Valdosta	(23) National Container Corp.	525
Jesup	(24) Rayonier, Inc.	250
Rome	(25) Rome Kraft Co.	650
St. Marys	(26) St. Marys Kraft Corp.	700
Savannah	(27) Southern Paperboard Corp.	500
Savannah	(28) Union Bag and Paper Corp.	1,900

TABLE 16.--COMPANIES DRAWING PULPWOOD FROM THE SOUTH, 1955 (continued)

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
LOUISIANA		
Shreveport	(29) Bird and Son	60
West Monroe	(30) The Brown Paper Mill Co.	550
Elizabeth	(31) Calcasieu Paper Co.	200
New Orleans	(32) Flintkote Co.	60
Bogalusa	(33) Gaylord Container Corp.	1,175
Bastrop	(34) International Paper Co. (Bastrop Mill)	535
Bastrop	(35) International Paper Co. (Louisiana Mill)	600
Springhill	(36) International Paper Co.	1,420
Hodge	(37) Southern Advance Bag and Paper Co.	325
MARYLAND		
Luke	(38) West Virginia Pulp and Paper Co.	300
MISSISSIPPI		
Meridian	(39) Flintkote Co.	132
Moss Point	(40) International Paper Co.	615
Natchez	(41) International Paper Co.	865
Laurel	(42) Masonite Corp.	800
Natchez	(43) Johns-Manville Products Corp.	300
Greenville	(44) United States Gypsum Co.	180
NORTH CAROLINA		
Canton	(45) Champion Paper and Fibre Co.	835
Roanoke Rapids	(46) Halifax Paper Co.	400
Sylva	(47) Mead Corp.	200
Plymouth	(48) North Carolina Pulp Co.	900
Acme	(49) Riegel Carolina Corp.	320
OHIO		
Chillicothe	(50) Mead Corp.	210
OKLAHOMA		
Pryor	(51) Certain-teed Products Corp.	60
PENNSYLVANIA		
York Haven	(52) International Paper Co.	65
Spring Grove	(53) P. H. Glatfelter Co.	150
SOUTH CAROLINA		
Georgetown	(54) International Paper Co.	1,870
Hartsville	(55) Sonoco Products Co.	80
Charleston	(56) West Virginia Pulp and Paper Co.	950
TENNESSEE		
Calhoun	(57) Bowaters Southern Paper Corp.	580
Harriman	(58) Mead Corp.	112
Kingsport	(59) Mead Corp.	200
Nashville	(60) Mead Corp.	70
Knoxville	(61) Southern Extract Co.	80

TABLE 16.--COMPANIES DRAWING PULPWOOD FROM THE SOUTH, 1955 (continued)

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
TEXAS		
Pasadena	(62) Champion Paper and Fibre Co.	575
Evadale	(63) East Texas Pulp and Paper Co.	315
Lufkin	(64) Southland Paper Mills	480
Dallas	(65) Ruberoid Co.	30
VIRGINIA		
Franklin	(66) Camp Manufacturing Co.	400
West Point	(67) Chesapeake Corp. of Virginia	550
Hopewell	(68) Continental Can Co.	600
Bristol	(69) Mead Corp., Columbian Division	85
Lynchburg	(70) Mead Corp., Heald Division	125
Big Island	(71) National Container Corp. of Virginia	150
Jarratt	(72) Southern Johns-Manville Products Corp.	200
Covington	(73) West Virginia Pulp and Paper Co.	725

[1] Corresponds to numbers at mill locations in fig. 1.

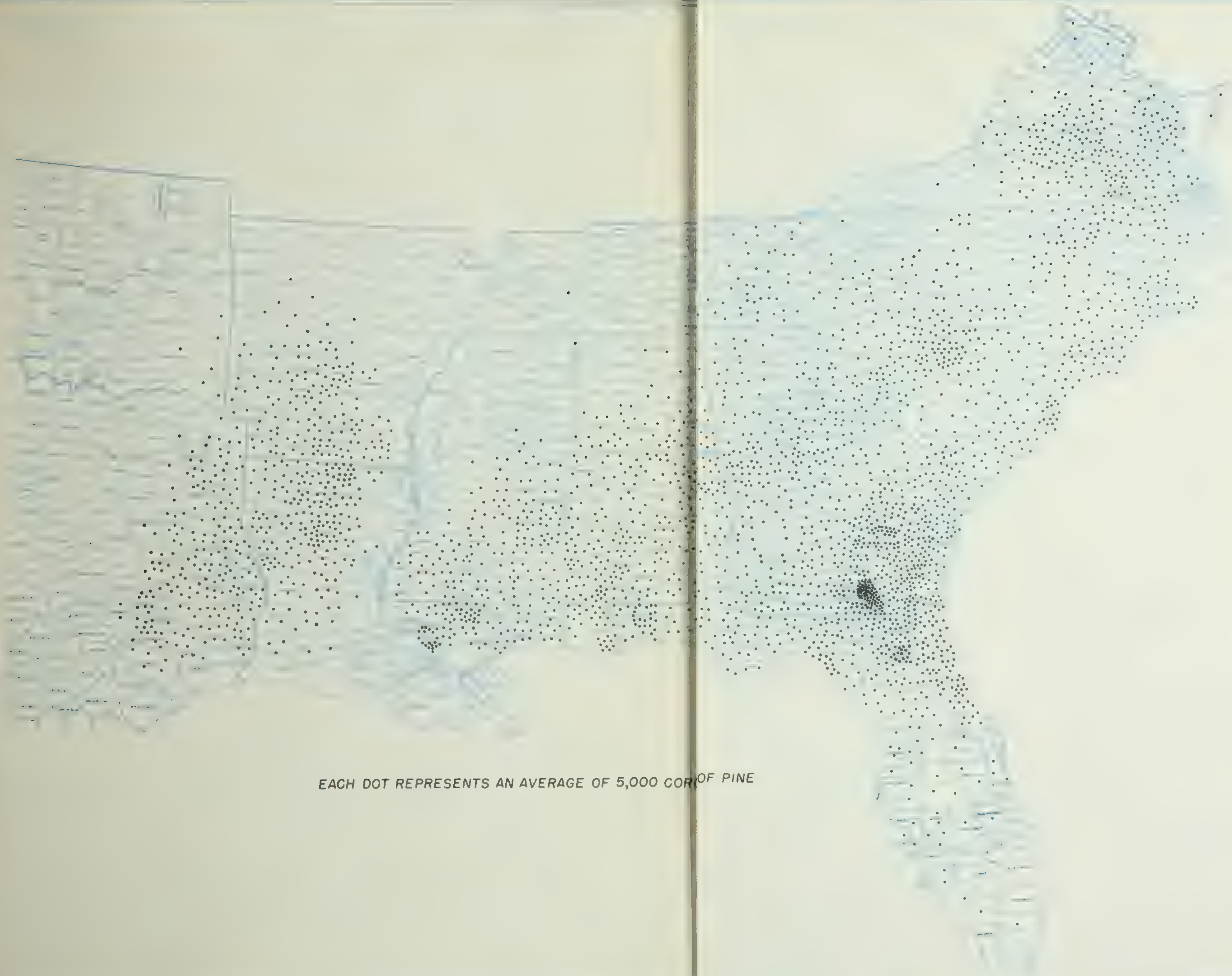
[2] Southern Pulp and Paper Manufacturer, vol. 18, no. 10 (Oct. 1, 1955); and other sources.

TABLE 17.--PULP MILLS UNDER CONSTRUCTION OR ANNOUNCED IN THE SOUTH

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
ALABAMA		
Brewton	(74) Container Corp. of America	300
Demopolis	(75) Gulf States Paper Corp.	300
Mobile	(76) International Paper Co.	300
Naheola	(77) Marathon Corp.	--
ARKANSAS		
Pine Bluff	(78) Dierks Paper Co.	150
Pine Bluff	(79) International Paper Co.	800
GEORGIA		
Jesup	(80) Rayonier, Inc.	275
TEXAS		
Houston	(81) United States Gypsum Co.	--

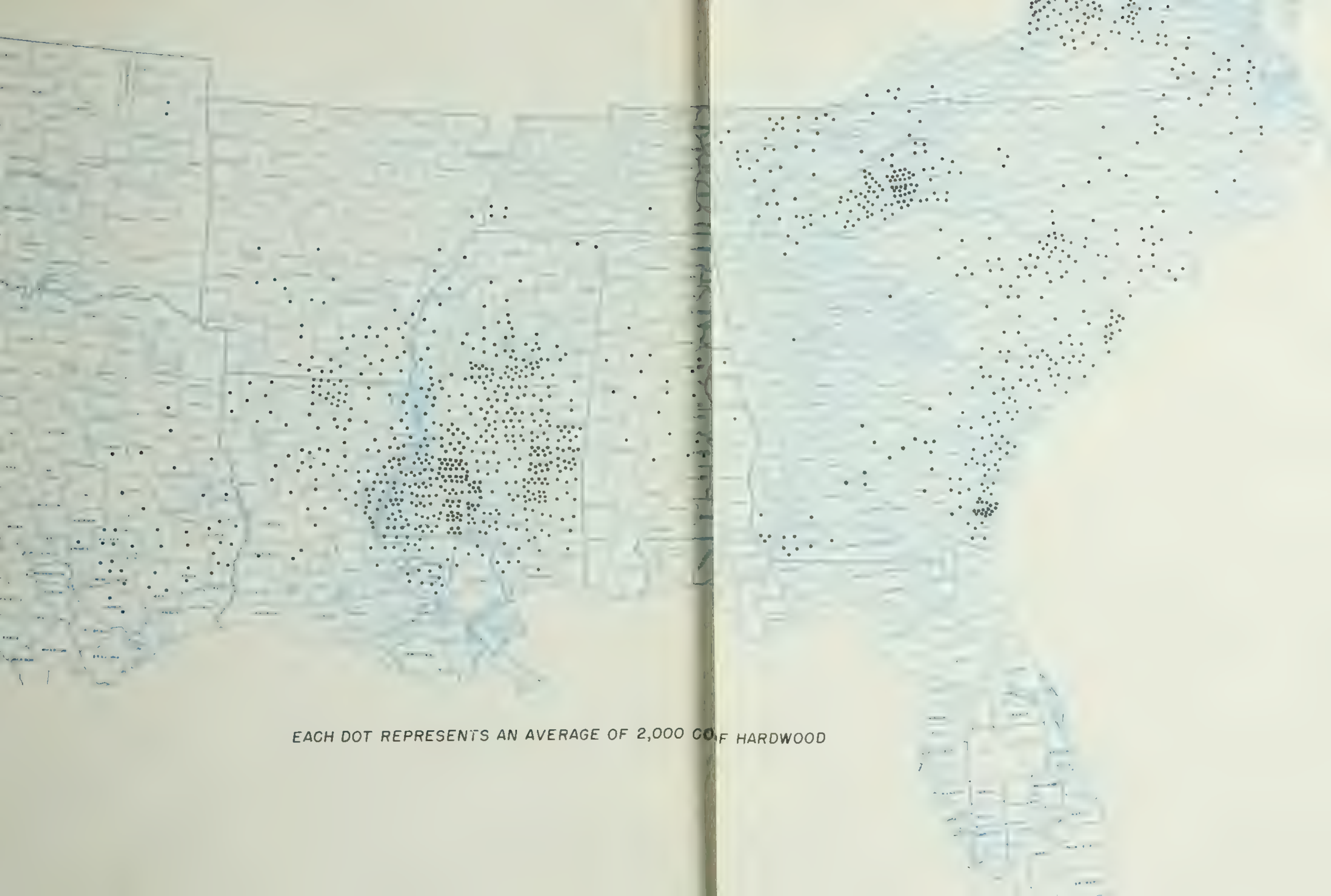
[1] Corresponds to number at mill location in fig. 1.

[2] Southern Pulp and Paper Manufacturer, and other sources.



EACH DOT REPRESENTS AN AVERAGE OF 5,000 COR OF PINE

Figure 3.--Pine pulpwood production by coun in the South, 1955



EACH DOT REPRESENTS AN AVERAGE OF 2,000 CO F HARDWOOD

FOREST SURVEY RELEASE NO. 48 JULY 1956

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FOREST STATISTICS FOR THE PIEDMONT OF NORTH CAROLINA, 1956

by

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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
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In cooperation with the
NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
DIVISION OF FORESTRY
F. H. Claridge - State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

The first Forest Survey of North Carolina was made during the late 1930's, and complete findings have been published. In 1952, a resurvey of the State was started to obtain up-to-date statistics on forest area, timber volume, growth, and the amount of timber cut. To date, progress reports on the resurvey have been issued for three of the four survey units as the field work was completed. This report covers the North Carolina Piedmont area, which is designated as Survey Unit No. 3. A statistical report for the entire State will be released in the near future.

ACKNOWLEDGMENTS

The Southeastern Station is indebted to the North Carolina Department of Conservation and Development and to Fred H. Claridge, State Forester, for providing personnel and equipment for a portion of the field survey.

Field data were collected by L. C. Nix, Robert C. Gilmore, William B. Buckley, Edwin H. Manchester, John Vousden, and Clifford J. Purdy, Jr. Aerial photo interpretation was done by William H. B. Haines and special mensurational work by Mackay B. Bryan. Office computations were under the direction of Agnes C. Nichols, assisted by Sammy Wenningham, Louise Shuford, Eunice Gamble, and Camilla Young.

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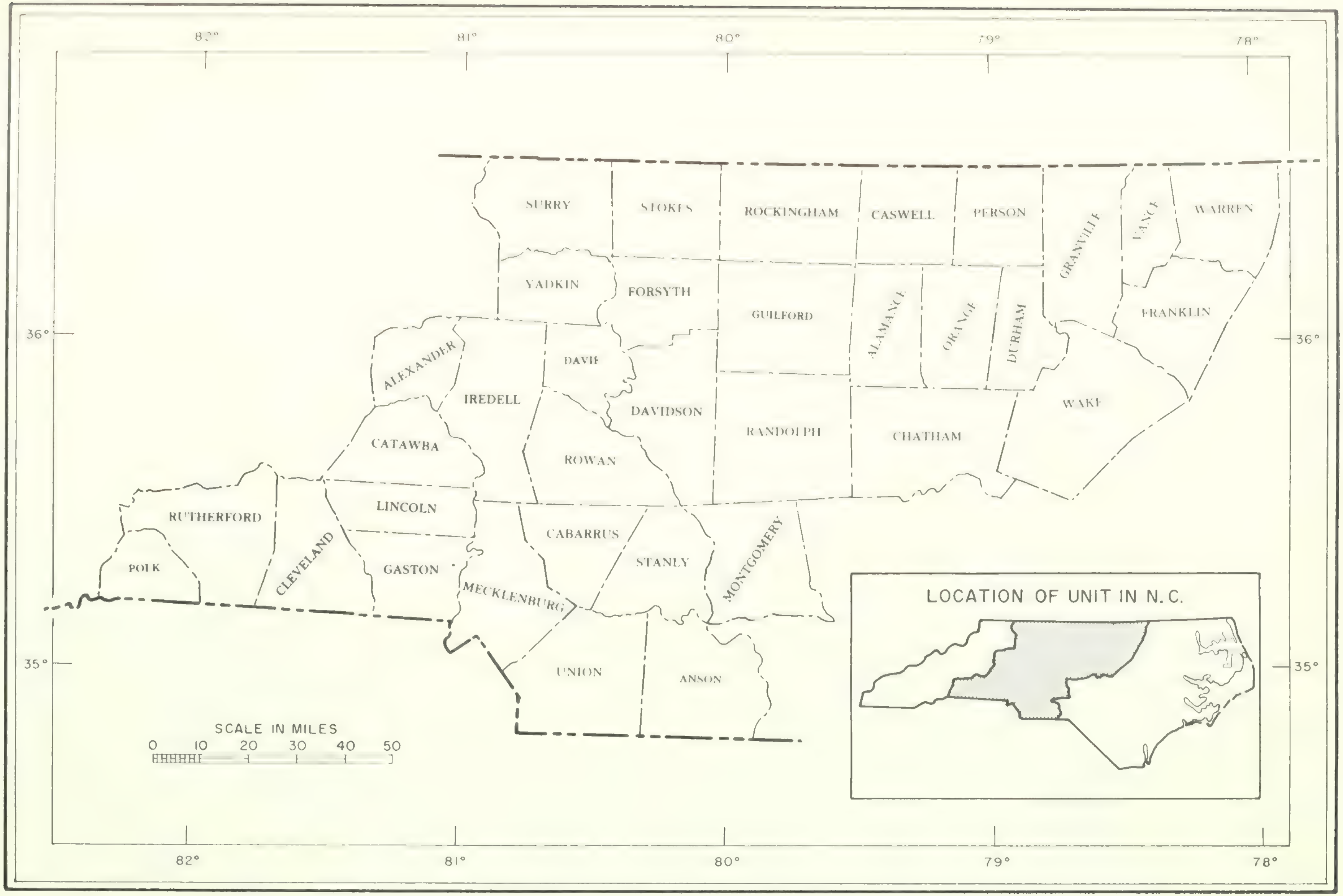

Figure 1.--Counties in the Piedmont of North Carolina included in Forest Survey Unit No. 3.

FOREST STATISTICS FOR THE PIEDMONT OF NORTH CAROLINA, 1956

The Piedmont of North Carolina (fig. 1) is an area of rolling to hilly land lying between the rugged mountains to the west and the flat, level Coastal Plain to the east. It stretches across the central part of the State in a broad band running northeast and southwest, being a portion of the Piedmont Plateau Region which extends from the Hudson River in New York State to east-central Alabama. Numerous small tracts of forest land intermingled with agricultural land are characteristic throughout the area. Small and highly diverse ownerships are the rule.

This progress report presents statistical information compiled from the second Forest Survey of North Carolina. Examination of systematically spaced points on aerial photographs provided information on forest area. A sample of the points classified as forest were selected to be examined on the ground. Measurements and observations on 1,640 one-fifth-acre plots distributed throughout the forest area in each of the 35 counties provided data on volume and growth of timber, on amount of timber cut, and on forest conditions. In addition to these forest plots, 680 nonforest plots were examined to check on the accuracy of the photo classification and to detect changes in land use since the photographs were made. Field work was done between July 1955 and January 1956.

The forest resources of North Carolina were first inventoried by the Forest Survey during the years 1937-38. Comparisons made between the results of the two surveys are discussed on the following pages to point out trends and changes which have taken place in the past 18 years. A careful adjustment of the 1937 data collected in the Piedmont has been made to eliminate differences due solely to changes in survey standards or methods used, so that comparisons would be valid.

PRESENT FOREST SITUATION AND RECENT TRENDS

Acreage of forest land shows 17-percent increase.--Piedmont North Carolina is the most heavily populated and industrialized section of the State, yet more than half the gross area is still forest land. The 1956 survey revealed that a total of 5.8 million acres, or 55 percent, was forested (fig. 2). Practically all of this acreage is available for production of commercial timber crops. Reserved land in State Parks, together with other noncommercial forest, amounts to only 21,000 acres.

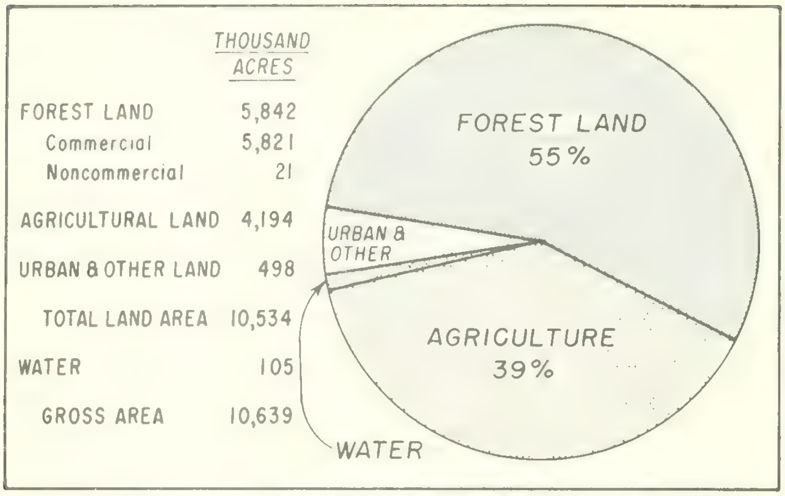

Figure 2.--Gross area of land and water in the Piedmont of North Carolina.

In the North Carolina Piedmont, as in many areas throughout the Southeast, the trend is toward a shift from agricultural use to forest. Since 1937, the area of forest land increased by 869,000 acres, a gain of 17 percent. Most of this increase is former agricultural and pasture lands which have been allowed to revert to forests--usually the poorer land which because of increased farm productivity and mechanization is no longer needed for crops.

Private ownership accounts for 5.7 million acres, or 98 percent of all commercial forest land in the area. Less than 100,000 acres are publicly owned, and most of this acreage is in State Parks or in the Uwharrie National Forest purchase unit. Farmers own or manage nearly 88 percent of the forest land, and industrial or other private holdings make up the remainder. Data taken from the 1950 Census of Agriculture show that the average farm contains 71 acres, half of which is in woodland.

Pine acreage shows 12 percent drop.--Another trend found in the North Carolina Piedmont is a gradual conversion of forest types from pine to hardwood. There are now about 400,000 fewer acres of yellow pine types than in 1937, a decline of 12 percent in 18 years. On the other hand, hardwood types have made substantial gains. These changes have reduced the proportion of forest area in pine types from 72 percent at the beginning of the period to 54 percent at the present time (fig. 3).

Shortleaf, loblolly, and other yellow pine species are under heavy demand for the manufacture of forest products. Loggers operating in mixed stands often cut all the pine but little of the hardwood timber. Thus, the residual stand often becomes a hardwood type.

The shortleaf pine type occupies 1.4 million acres and is the most important of the softwood group. Loblolly and Virginia pine types together also contain more than 1 million acres. The most extensive hardwood type is oak-hickory, which covers nearly 2 million acres.

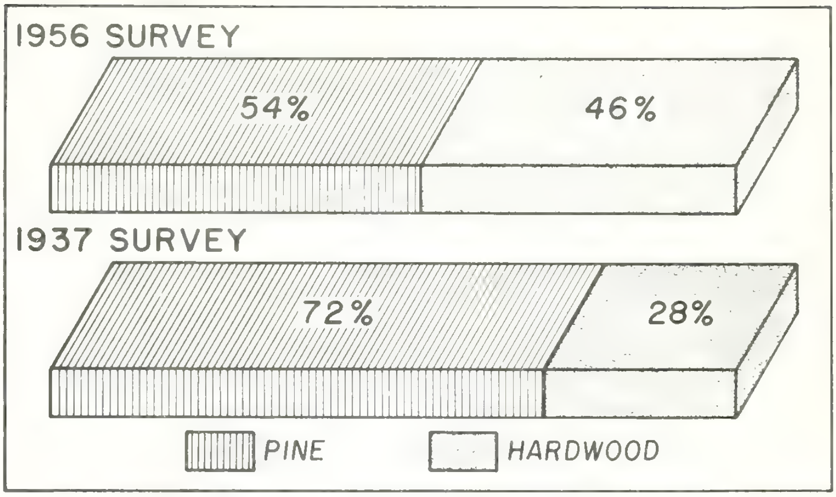

Figure 3.--Shift of forest area from pine types to hardwood.

Pine sawtimber volume down 15 percent.--Cutting in excess of growth since 1937 decreased the volume of yellow pine sawtimber by 1.2 billion board-feet--a drop of 15 percent (table A).

Table A.--Comparison of sawtimber volume, 1937 to 1956

Species group	1937[1]	1956	Change	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Yellow pines	7,605	6,443	-1,162	-15
Other softwoods	54	62	+8	+15
Hardwoods	5,002	6,956	+1,954	+39
All species	12,661	13,461	+800	+6

[1] Original survey volumes have been recomputed to allow for differences in standards between the two surveys and to provide a uniform basis for comparison. Thus, the 1937 estimate shown here will not agree with the volumes previously published.

Hardwood sawtimber, like hardwood type acreage, increased, showing a gain of almost 2 billion board-feet. This was more than enough to offset the drop in pine and, as a result, the total net increase in the sawtimber supply was 6 percent.

A comparison of stand tables for the two surveys shows that the number of pine sawtimber trees has decreased in all diameter classes. Losses range from 2.5 percent in the 10-inch class to over 40 percent in the larger diameters. On the other hand, the number of pine trees in pole sizes had increased substantially. Large gains were also made by hardwood species in all sizes up to 30 inches.

Shortleaf pine predominates.--Sawtimber volume in the Piedmont is about equally divided between softwoods and hardwoods. The leading species is shortleaf pine, which makes up more than half the softwood volume and over one-fourth the total volume (fig. 4). Loblolly and Virginia pine are also important.

Among the hardwoods, a large variety of oak species combine to make up a major share of the board-foot volume. The white oak-swamp chestnut oak group is the largest, and fortunately these species generally grow straighter, are less defective, and have more desirable wood properties than many of the other oaks. In the red oak group, three-fourths of the volume is composed of scarlet, black, southern red, and other less desirable species.

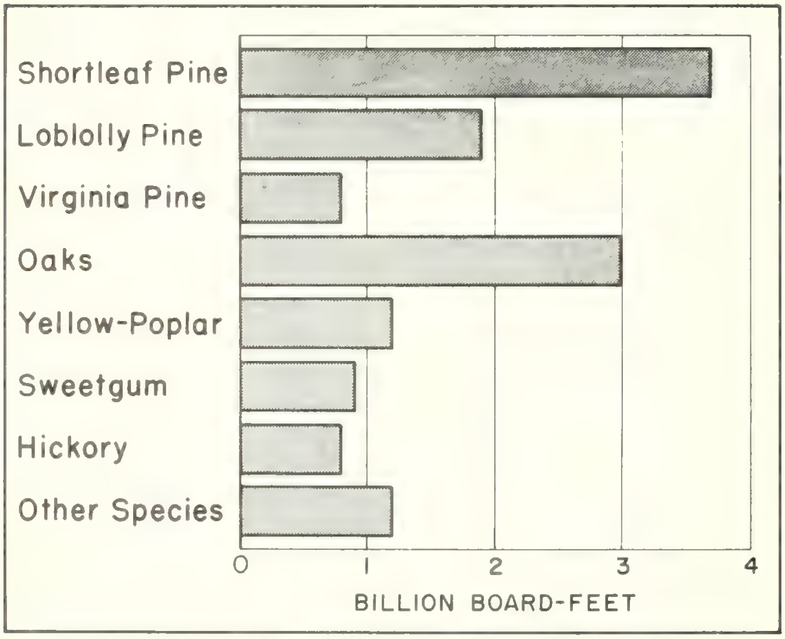

Figure 4.--Sawtimber volume by species.

Among hardwood species other than oaks, yellow-poplar is the most abundant. This valuable timber tree accounts for 17 percent of the hardwood volume. Other principal hardwood species include sweetgum, hickory, ash, and maple.

The Piedmont contains 83 million cords of wood in trees of various sizes, species, and quality. Only a third of this volume is in trees which are large enough and of high enough quality to make saw logs (fig. 5). Forty-one percent is in poletimber trees which are expected to be of sawtimber quality when they become large enough. Growing stock, which includes the wood in both sawtimber and poletimber trees to a 4-inch top, totals 71 million cords, or 85 percent of all wood volume in the unit. Most of the remaining

12 million cords are in cull trees which will not now, or in the future, produce a minimum 12-foot log with at least 50 percent of its volume suitable for lumber.

Nearly all of the cull volume is in "sound" cull trees; that is, in trees which are not suitable for saw logs because of sound defects such as crook and excessive limbiness. Many of these trees can be used for such products as pulpwood, fence posts, and other items where clear length and straightness are not limiting factors. The very large and limby sound culls and practically all of the rotten culls have very little use except for fuelwood. Included with the culls are the limbs on hardwood sawtimber; these make up 13 percent of the cull volume.

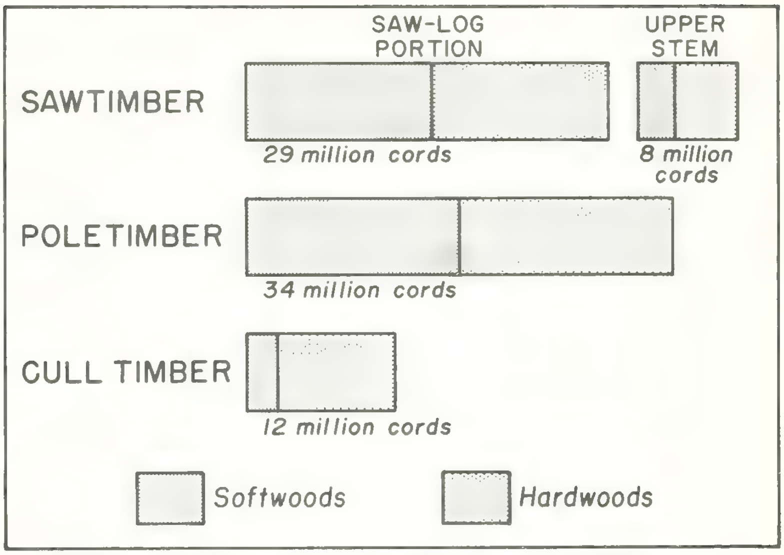

Figure 5.--Net cordwood volume of timber by species group and class of material.

Much of the sawtimber volume in the Piedmont is in trees capable of producing only small saw logs. Nearly two-thirds of the softwood sawtimber volume is in trees which measure 10 or 12 inches in diameter at breast height. Hardwood sawtimber averages somewhat larger, partly because 10-inch trees are not considered large enough to produce saw logs. Twelve-inch trees contain one-fourth of the hardwood sawtimber volume and more than half of the total is in trees under 20 inches in size.

Growing stock volume is up 17 percent.--In contrast to an increase of only 6 percent for sawtimber, growing stock shows a gain of 17 percent since 1937 (table B). This greater increase in growing stock was due mainly to the substantial increase in poletimber during this period. In the yellow pine group, the increase in poletimber just about offset the 15-percent drop in sawtimber, leaving the growing stock volume about the same. Hardwood growing stock shows a substantial gain of 45 percent.

Table B.--Comparison of volume in all trees 5.0 inches d.b.h. and larger, 1937 to 1956

Species group and class of material	1937[1]	1956	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Growing stock:				
Yellow pines	2,488	2,417	-71	-3
Other softwoods	32	36	+4	+12
Hardwoods	1,786	2,596	+810	+45
All species	4,306	5,049	+743	+17
Cull trees:				
Yellow pines	112	165	+53	+47
Other softwoods	1	6	+5	+500
Hardwoods[2]	421	562	+141	+33
All species	534	733	+199	+37
All live trees	4,840	5,782	+942	+19

[1] See footnote 1, table A.

[2] Excludes limb volume of hardwood sawtimber trees.

The big increase in hardwood sawtimber coupled with the drop in yellow pine has increased the hardwood proportion from 40 percent in 1937 to 52 percent in 1956. The proportion of hardwood growing stock jumped from 41 percent to 51 percent.

Percentage-wise, the increase in cull-tree volume was more than twice as great as in growing stock. However, cull timber in the Piedmont makes up a relatively small part of the total volume, and this increase changed the proportion of cull volume only slightly--from 11 percent in 1937 to 13 percent in 1956.

Annual growth is 825 million board-feet of sawtimber, 4 million cords of growing stock.--Sawtimber growth in the Piedmont is 825 million feet a year. This represents a growth rate of about 6 percent on the sawtimber inventory volume. More than half this growth is on yellow pine trees.

The average annual growth per acre of all stands in the Piedmont is 157 board-feet. The range is from 84 board-feet for Virginia pine stands to 254 board-feet for loblolly pine stands. While growth of sawtimber stands for all types averages 292 board-feet per acre, loblolly pine annual growth goes as high as 483 board-feet per acre.

Growing stock growth averages about 0.7 cord per acre per year for all stands and 1.0 cord per acre for sawtimber stands. In loblolly sawtimber stands the growth is 1.5 cords per acre.

Hardwood supply continues rapid increase.--Hardwood volume is increasing even faster now than during the 18-year period between surveys, especially growing stock. Hardwood sawtimber increased at an average annual rate of 2.2 percent between surveys, compared to the current rate of 2.5 percent. The annual rate of increase of hardwood growing stock between surveys was 2.5 percent; now it is 2.7 percent.

Yellow-poplar, sweetgum, and other soft hardwoods are increasing at a much faster rate than the hard hardwoods. However, hard hardwoods have much the larger inventory volume and they account for a greater share of the volume increase (fig. 6).

In contrast to the rapidly increasing hardwood supply, yellow pine sawtimber is decreasing at a slightly faster rate now than the average during the past 18 years. Current yellow pine sawtimber cut exceeds the growth by 65 million board-feet per year, or about 1 percent of the inventory volume. Yellow pine growing stock is still just barely holding its own--just as it has during the period between surveys.

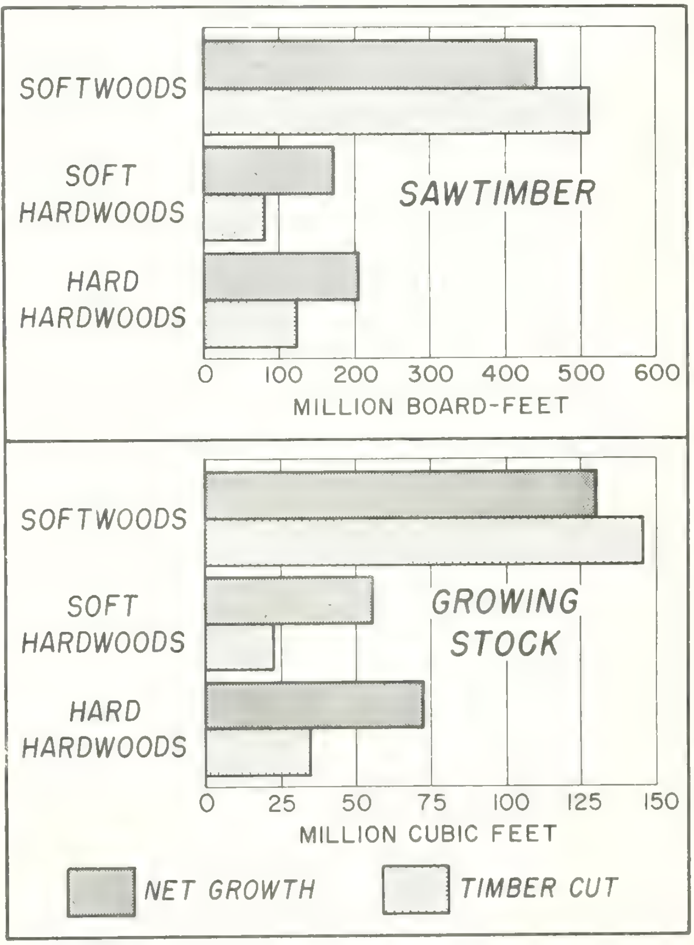

Figure 6.--Comparison of timber growth and timber cut in the Piedmont region of North Carolina.

Table 1.--Gross area[1] by broad use class, 1956

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	5,821.1	54.7
Noncommercial:		
Productive-reserved	15.9	0.2
Unproductive	4.5	(2/)
Total forest	5,841.5	54.9
Nonforest land:		
Agriculture	4,194.0	39.4
Urban and other[3]	497.9	4.7
Total nonforest	4,691.9	44.1
Total land area	10,533.4	99.0
Total water area[4]	105.3	1.0
All classes	10,638.7	100.0

1/ From U. S. Bureau of the Census, 1950.

2/ Less than 0.05 percent.

3/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

4/ Includes 48,600 acres of Census water reported in 1950 plus 14,000 acres of Census water created since 1950. Also includes 42,700 acres of water according to Survey standards but defined by the Bureau of the Census as land area.

Table 2.--Ownership of commercial forest land, 1956

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	55.1	0.9
Indian	--	--
Other Federal	10.5	0.2
Total Federal	65.6	1.1
State	20.3	0.4
County and municipal	11.9	0.2
Total public	97.8	1.7
Private		
Farm	5,110.9	87.8
Other	612.4	10.5
Total private	5,723.3	98.3
All classes	5,821.1	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1956

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	76.7	207.0	318.6	75.3	4.7	682.3
Shortleaf pine	43.2	596.9	560.9	136.0	15.7	1,352.7
Virginia pine	3.7	144.5	248.2	166.2	27.0	589.6
White pine	4.3	2.3	--	--	4.3	10.9
Total	127.9	950.7	1,127.7	377.5	51.7	2,635.5
Hardwood types:						
Oak-pine	64.3	180.0	370.2	112.2	2.1	728.8
Oak-hickory	409.9	464.1	845.6	187.3	23.5	1,930.4
Oak-gum-cypress	147.3	123.1	166.7	50.2	39.1	526.4
Total	621.5	767.2	1,382.5	349.7	64.7	3,185.6
All types	749.4	1,717.9	2,510.2	727.2	116.4	5,821.1
Percent	12.9	29.5	43.1	12.5	2.0	100.0

[1] See description of forest types and stand-size classes under Definition of Terms.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, 1956

(In million board-feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	29.3	3.8	5.8	--	--	38.9
Loblolly pine	700.8	1,024.3	200.3	5.2	0.5	1,931.1
Shortleaf pine	389.7	2,886.5	373.5	32.5	1.8	3,684.0
Virginia pine	68.3	592.6	123.7	3.5	0.7	788.8
Total	1,188.1	4,507.2	703.3	41.2	3.0	6,442.8
White pine	12.7	4.5	1.0	--	4.7	22.9
Redcedar	5.9	18.7	14.1	--	0.3	39.0
Total sftwds.	1,206.7	4,530.4	718.4	41.2	8.0	6,504.7
Hardwoods:						
Blackgum	30.9	53.3	12.4	1.9	6.7	105.2
Sweetgum	422.7	368.4	92.8	2.9	--	886.8
Yellow-poplar	605.4	460.7	99.3	21.6	--	1,187.0
Soft maple	97.2	64.1	22.6	3.2	1.2	188.3
Other soft hdwds.	208.4	56.9	32.8	1.3	4.4	303.8
Total	1,364.6	1,003.4	259.9	30.9	12.3	2,671.1
White & swamp chestnut oaks	657.9	491.3	131.8	13.6	1.4	1,296.0
Other white oaks	167.9	169.1	63.1	1.3	--	401.4
No. red & swamp red oaks	162.0	90.2	69.8	7.9	--	329.9
Other red oaks	347.6	434.2	134.7	16.0	--	932.5
Hickory	370.9	281.3	165.8	10.5	--	828.5
Ash	97.1	56.1	25.7	--	--	178.9
Beech	91.1	15.9	10.2	--	--	117.2
Sugar maple	1.5	2.7	0.8	--	--	5.0
Black walnut	2.1	11.3	2.3	--	--	15.7
Other hard hdwds.	88.5	74.8	15.5	1.6	--	180.4
Total	1,986.6	1,626.9	619.7	50.9	1.4	4,285.5
Total hdwds.	3,351.2	2,630.3	879.6	81.8	13.7	6,956.6
All species	4,557.9	7,160.7	1,598.0	123.0	21.7	13,461.3
Percent	33.8	53.2	11.9	0.9	0.2	100.0

[1] Log scale, International 1/4-inch rule.

[2] See Definition of Terms for species combined with others.

Table 5.--Net volume[1] of sawtimber by species and diameter class, 1956

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Longleaf pine	6.6	23.8	8.5	--	38.9	0.3
Loblolly pine	861.2	792.1	232.1	45.7	1,931.1	14.3
Shortleaf pine	2,654.3	909.8	100.9	19.0	3,684.0	27.4
Virginia pine	526.2	248.4	14.2	--	788.8	5.8
Total	4,048.3	1,974.1	355.7	64.7	6,442.8	47.8
White pine	11.2	--	11.7	--	22.9	0.2
Redcedar	24.4	14.6	--	--	39.0	0.3
Total sftwds.	4,083.9	1,988.7	367.4	64.7	6,504.7	48.3
Hardwoods:						
Blackgum	49.5	55.7	--	--	105.2	0.8
Sweetgum	211.7	486.6	155.8	32.7	886.8	6.6
Yellow-poplar	284.9	590.4	279.0	32.7	1,187.0	8.8
Soft maple	59.8	85.6	35.1	7.8	188.3	1.4
Other soft hdwds.	33.4	136.4	97.7	36.3	303.8	2.3
Total	639.3	1,354.7	567.6	109.5	2,671.1	19.9
White & swamp chestnut oaks	299.4	667.6	268.5	60.5	1,296.0	9.6
Other white oaks	133.0	199.1	63.8	5.5	401.4	3.0
No. red & swamp red oaks	79.9	172.6	49.1	28.3	329.9	2.5
Other red oaks	268.4	481.4	136.9	45.8	932.5	6.9
Hickory	235.4	439.0	124.8	29.3	828.5	6.2
Ash	63.0	85.7	24.4	5.8	178.9	1.3
Beech	12.8	53.7	32.9	17.8	117.2	0.9
Sugar maple	3.3	1.7	--	--	5.0	(3/)
Black walnut	6.6	9.1	--	--	15.7	0.1
Other hard hdwds.	43.3	95.0	33.3	8.8	180.4	1.3
Total	1,145.1	2,204.9	733.7	201.8	4,285.5	31.8
Total hdwds.	1,784.4	3,559.6	1,301.3	311.3	6,956.6	51.7
All species	5,868.3	5,548.3	1,668.7	376.0	13,461.3	100.0
Percent	43.6	41.2	12.4	2.8	100.0	--

1/ Log scale, International 1/4-inch rule.

2/ Ten-inch hardwoods are not included since they are below sawtimber size.

3/ Less than 0.05 percent.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1956

(In million board-feet)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	857.7	1,009.7	209.9	2.9	--	2,080.2
Shortleaf pine	355.3	2,987.3	292.6	11.0	1.8	3,648.0
Virginia pine	22.1	642.2	103.7	26.7	0.7	795.4
White pine	13.6	4.6	--	--	6.1	24.3
Total	1,248.7	4,643.8	606.2	40.6	8.6	6,547.9
Hardwood types:						
Oak-pine	382.9	584.8	240.7	29.2	2.0	1,239.6
Oak-hickory	2,112.5	1,421.9	631.6	46.6	--	4,212.6
Oak-gum-cypress	813.8	510.2	119.5	6.6	11.1	1,461.2
Total	3,309.2	2,516.9	991.8	82.4	13.1	6,913.4
All types	4,557.9	7,160.7	1,598.0	123.0	21.7	13,461.3
Percent	33.8	53.2	11.9	0.9	0.2	100.0

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, 1956

PINE

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd.-ft.	Percent	Million bd.-ft.	Percent	Million bd.-ft.	Percent
Grade 1	--	--	44.1	3.2	44.1	0.7
Grade 2	450.9	8.9	274.0	19.9	724.9	11.2
Grade 3	3,495.5	69.0	721.5	52.4	4,217.0	65.5
Grade 4	1,119.5	22.1	337.3	24.5	1,456.8	22.6
Total	5,065.9	100.0	1,376.9	100.0	6,442.8	100.0

OTHER SOFTWOODS

Grade 1	--	--	--	--	--	(2/)
Grade 2	0.7	1.5	5.7	39.1	6.4	10.4
Grade 3	33.8	71.5	5.4	36.5	39.2	63.3
Grade 4	12.7	27.0	3.6	24.4	16.3	26.3
Total	47.2	100.0	14.7	100.0	61.9	100.0

SOFT HARDWOODS

Grade 1	--	--	188.0	13.5	188.0	7.0
Grade 2	34.5	2.7	272.9	19.6	307.4	11.5
Grade 3	430.9	33.7	373.2	26.8	804.1	30.1
Grade 4	813.3	63.6	558.3	40.1	1,371.6	51.4
Total	1,278.7	100.0	1,392.4	100.0	2,671.1	100.0

HARD HARDWOODS

Grade 1	--	--	315.4	14.5	315.4	7.4
Grade 2	99.2	4.7	528.6	24.3	627.8	14.6
Grade 3	310.2	14.7	385.0	17.7	695.2	16.2
Grade 4	1,700.9	80.6	946.2	43.5	2,647.1	61.8
Total	2,110.3	100.0	2,175.2	100.0	4,285.5	100.0

1/ Ten-inch hardwoods not included since they are below sawtimber size.

2/ Insufficient sample.

Table 8.--Net volume[1] of all timber by species and stand-size class, 1956

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	65	12	16	--	--	93
Loblolly pine	1,675	4,083	2,395	66	2	8,221
Shortleaf pine	1,109	13,743	5,810	228	6	20,896
Virginia pine	248	2,734	2,146	11	8	5,147
Total	3,097	20,572	10,367	305	16	34,357
White pine	23	14	3	--	14	54
Redcedar	69	153	199	21	1	443
Total sftwds.	3,189	20,739	10,569	326	31	34,854
Hardwoods:						
Blackgum	299	260	309	6	34	908
Sweetgum	1,358	1,856	1,101	66	--	4,381
Yellow-poplar	1,897	1,971	770	102	--	4,740
Soft maple	437	678	419	20	4	1,558
Other soft hdwds.	620	310	322	15	13	1,280
Total	4,611	5,075	2,921	209	51	12,867
White & swamp chestnut oaks	2,154	2,440	1,754	91	4	6,443
Other white oaks	588	1,148	1,011	9	--	2,756
No. red & swamp red oaks	466	481	483	21	--	1,451
Other red oaks	1,177	2,084	1,847	63	--	5,171
Hickory	1,189	1,439	1,105	35	--	3,768
Ash	426	375	259	--	--	1,060
Beech	335	62	182	--	--	579
Sugar maple	6	10	3	--	--	19
Black walnut	76	31	7	--	--	114
Dogwood, persimmon	81	96	192	11	--	380
Other hard hdwds.	383	408	241	30	--	1,062
Total	6,881	8,574	7,084	260	4	22,803
Total hdwds.	11,492	13,649	10,005	469	55	35,670
All species	14,681	34,388	20,574	795	86	70,524
Percent	20.8	48.8	29.2	1.1	0.1	100.0

OTHER MATERIAL

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Sound culls:						
Softwoods	69	598	1,354	338	64	2,423
Hardwoods[2]	1,522	2,220	2,704	389	68	6,903
Rotten culls	173	344	518	77	4	1,116
Hardwood limbs	777	454	257	45	6	1,539
Total other material	2,541	3,616	4,833	849	142	11,981

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 9.--Net volume[1] of all timber by species and diameter class, 1956

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	--	--	21	--	54	18	93
Loblolly pine	1,462	1,789	1,452	1,122	1,850	546	8,221
Shortleaf pine	4,758	5,847	4,491	3,281	2,268	251	20,896
Virginia pine	1,339	1,524	960	696	599	29	5,147
Total	7,559	9,160	6,924	5,099	4,771	844	34,357
White pine	--	--	22	12	--	20	54
Redcedar	255	99	34	25	30	--	443
Total sftwds.	7,814	9,259	6,980	5,136	4,801	864	34,854
Hardwoods:							
Blackgum	144	192	243	165	164	--	908
Sweetgum	729	724	716	612	1,192	408	4,381
Yellow-poplar	555	566	637	834	1,463	685	4,740
Soft maple	287	399	275	225	261	111	1,558
Other soft hdwds.	174	187	96	112	390	321	1,280
Total	1,889	2,068	1,967	1,948	3,470	1,525	12,867
White & swamp chestnut oaks	706	1,055	1,263	926	1,726	767	6,443
Other white oaks	366	634	578	456	557	165	2,756
No. red & swamp red oaks	122	298	186	238	440	167	1,451
Other red oaks	691	818	1,094	855	1,282	431	5,171
Hickory	328	609	636	723	1,132	340	3,768
Ash	117	306	104	214	247	72	1,060
Beech	67	73	123	49	144	123	579
Sugar maple	--	--	--	13	6	--	19
Black walnut	6	24	40	19	25	--	114
Dogwood, persimmon	317	35	--	17	11	--	380
Other hard hdwds.	133	161	232	146	282	108	1,062
Total	2,853	4,013	4,256	3,656	5,852	2,173	22,803
Total hdwds.	4,742	6,081	6,223	5,604	9,322	3,698	35,670
All species	12,556	15,340	13,203	10,740	14,123	4,562	70,524
Percent	17.8	21.8	18.7	15.2	20.0	6.5	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	691	575	585	315	244	13	2,423
Hardwoods[2]	1,630	1,447	1,185	588	1,285	768	6,903
Rotten culls	223	164	120	123	230	256	1,116
Hardwood limbs	--	--	--	184	661	694	1,539
Total other material	2,544	2,186	1,890	1,210	2,420	1,731	11,981

1/ Sound wood and bark.

2/ Includes noncommercial species.

Table 10.--Net volume[1] of all timber by species and class of material, 1956

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Longleaf pine	80	13	--	93	8	--
Loblolly pine	4,136	834	3,251	8,221	172	--
Shortleaf pine	8,642	1,649	10,605	20,896	546	7
Virginia pine	1,768	516	2,863	5,147	1,624	14
Total	14,626	3,012	16,719	34,357	2,350	21
White pine	40	14	--	54	1	--
Redcedar	78	11	354	443	72	1
Total sftwds.	14,744	3,037	17,073	34,854	2,423	22
Hardwoods:						
Blackgum	237	92	579	908	345	169
Sweetgum	1,768	444	2,169	4,381	553	79
Yellow-poplar	2,373	609	1,758	4,740	343	92
Soft maple	392	205	961	1,558	1,217	188
Other soft hdwds.	619	204	457	1,280	567	29
Total	5,389	1,554	5,924	12,867	3,025	557
White & swamp chestnut oaks	2,599	820	3,024	6,443	773	86
Other white oaks	822	356	1,578	2,756	1,022	149
No. red & swamp red oaks	640	205	606	1,451	292	56
Other red oaks	1,894	674	2,603	5,171	761	179
Hickory	1,627	568	1,573	3,768	514	77
Ash	385	148	527	1,060	317	16
Beech	229	87	263	579	239	32
Sugar maple	12	7	--	19	22	--
Black walnut	34	10	70	114	41	1
Dogwood, persimmon	17	11	352	380	226	50
Scrub oak[3]	--	--	--	--	444	31
Other hard hdwds.	351	185	526	1,062	582	44
Total	8,610	3,071	11,122	22,803	5,233	721
Total hdwds.	13,999	4,625	17,046	35,670	8,258	1,278
All species	28,743	7,662	34,119	70,524	10,681	1,300
Percent	40.7	10.9	48.4	100.0	89.1	10.9

[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, 1956

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	2,184	4,467	2,788	66	--	9,505
Shortleaf pine	1,132	14,861	5,015	89	6	21,103
Virginia pine	68	2,924	2,145	184	8	5,329
White pine	59	19	--	--	18	96
Total	3,443	22,271	9,948	339	32	36,033
Hardwood types:						
Oak-pine	1,197	2,724	2,750	160	6	6,837
Oak-hickory	7,301	7,059	6,670	221	--	21,251
Oak-gum-cypress	2,740	2,334	1,206	75	48	6,403
Total	11,238	12,117	10,626	456	54	34,491
All types	14,681	34,388	20,574	795	86	70,524
Percent	20.8	48.8	29.2	1.1	0.1	100.0
OTHER MATERIAL						
Softwood types:						
Loblolly pine	147	246	299	2	--	694
Shortleaf pine	106	706	712	119	12	1,655
Virginia pine	15	448	759	296	48	1,566
White pine	4	--	--	--	--	4
Total	272	1,400	1,770	417	60	3,919
Hardwood types:						
Oak-pine	259	398	769	148	9	1,583
Oak-hickory	1,303	1,374	1,770	184	15	4,646
Oak-gum-cypress	707	444	524	100	58	1,833
Total	2,269	2,216	3,063	432	82	8,062
All types	2,541	3,616	4,833	849	142	11,981
Percent	21.2	30.2	40.3	7.1	1.2	100.0

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[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1956

(In million cubic feet)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	--	--	1.5	--	4.4	1.5	7.4
Loblolly pine	85.4	119.5	110.3	85.0	148.8	46.6	595.6
Shortleaf pine	278.3	392.4	341.6	247.4	179.0	21.4	1,460.1
Virginia pine	78.5	102.6	70.8	51.7	48.0	2.5	354.1
Total	442.2	614.5	524.2	384.1	380.2	72.0	2,417.2
White pine	--	--	1.6	1.0	--	1.9	4.5
Redcedar	16.2	7.5	2.9	2.2	2.8	--	31.6
Total sftwds.	458.4	622.0	528.7	387.3	383.0	73.9	2,453.3
Hardwoods:							
Blackgum	8.2	12.7	17.5	12.6	13.0	--	64.0
Sweetgum	41.2	47.7	51.6	46.5	95.7	33.7	316.4
Yellow-poplar	31.6	37.4	53.1	62.5	116.6	56.1	357.3
Soft maple	16.6	26.3	20.0	16.9	20.6	9.2	109.6
Other soft hdwds.	10.0	12.3	6.9	8.5	30.9	26.5	95.1
Total	107.6	136.4	149.1	147.0	276.8	125.5	942.4
White & swamp chestnut oaks	40.2	69.6	90.5	70.2	137.2	63.1	470.8
Other white oaks	21.1	41.7	41.8	33.9	44.8	13.6	196.9
No. red & swamp red oaks	6.9	19.6	13.4	18.4	35.1	13.9	107.3
Other red oaks	39.9	54.2	78.3	64.2	101.5	35.3	373.4
Hickory	18.5	40.3	45.8	54.3	90.1	27.9	276.9
Ash	6.8	20.1	7.5	16.0	19.5	6.0	75.9
Beech	3.9	4.8	8.8	3.6	11.7	10.1	42.9
Sugar maple	--	--	--	0.9	0.5	--	1.4
Black walnut	0.3	1.6	2.9	1.6	1.9	--	8.3
Dogwood, persimmon	18.3	2.3	--	1.3	0.9	--	22.8
Other hard hdwds.	7.7	10.5	16.7	11.0	22.4	9.0	77.3
Total	163.6	264.7	305.7	275.4	465.6	178.9	1,653.9
Total hdwds.	271.2	401.1	454.8	422.4	742.4	304.4	2,596.3
All species	729.6	1,023.1	983.5	809.7	1,125.4	378.3	5,049.6
Percent	14.4	20.3	19.5	16.0	22.3	7.5	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	41.0	38.9	44.1	24.5	19.3	1.1	168.9
Hardwoods	92.2	95.3	85.4	44.3	102.6	63.4	483.2
Rotten culls	12.7	10.9	8.5	8.4	19.3	21.0	80.8
Hardwood limbs	--	--	--	15.9	50.3	58.1	124.3
Total other material	145.9	145.1	138.0	93.1	191.5	143.6	857.2

[1] Excluding bark.

Table 13.--Net volume[1] of all timber by species and class of material, 1956

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Longleaf pine	6.2	1.2	--	7.4	0.7	--
Loblolly pine	320.6	70.1	204.9	595.6	12.3	--
Shortleaf pine	647.2	142.2	670.7	1,460.1	38.9	0.6
Virginia pine	134.0	39.0	181.1	354.1	111.4	0.9
Total	1,108.0	252.5	1,056.7	2,417.2	163.3	1.5
White pine	3.6	0.9	--	4.5	0.1	--
Redcedar	6.8	1.1	23.7	31.6	5.5	0.1
Total sftwds.	1,118.4	254.5	1,080.4	2,453.3	168.9	1.6
Hardwoods:						
Blackgum	18.8	6.8	38.4	64.0	22.6	11.9
Sweetgum	141.7	34.2	140.5	316.4	40.8	5.8
Yellow-poplar	189.3	45.9	122.1	357.3	25.7	7.1
Soft maple	31.6	15.1	62.9	109.6	85.9	14.0
Other soft hdwds.	49.9	16.0	29.2	95.1	41.0	2.2
Total	431.3	118.0	393.1	942.4	216.0	41.0
White & swamp chestnut oaks	206.8	63.7	200.3	470.8	57.4	6.9
Other white oaks	64.6	27.7	104.6	196.9	75.8	11.6
No. red & swamp red oaks	51.1	16.3	39.9	107.3	21.0	4.7
Other red oaks	149.5	51.5	172.4	373.4	57.5	13.6
Hickory	129.5	42.8	104.6	276.9	37.9	5.8
Ash	30.2	11.3	34.4	75.9	22.7	1.2
Beech	18.5	6.9	17.5	42.9	16.7	2.4
Sugar maple	0.9	0.5	--	1.4	1.4	--
Black walnut	2.6	0.9	4.8	8.3	3.4	0.1
Dogwood, persimmon	1.4	0.8	20.6	22.8	13.4	2.9
Scrub oak[3]	--	--	--	--	28.8	2.0
Other hard hdwds.	28.9	13.5	34.9	77.3	39.2	3.3
Total	684.0	235.9	734.0	1,653.9	375.2	54.5
Total hdwds.	1,115.3	353.9	1,127.1	2,596.3	591.2	95.5
All species	2,233.7	608.4	2,207.5	5,049.6	760.1	97.1
Percent	44.2	12.1	43.7	100.0	88.7	11.3

1/ Excluding bark.

2/ Includes limb volume of hardwood sawtimber trees.

3/ Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, 1956

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Loblolly pine					
Softwood	8,858	4,313	574	--	2,572
Hardwood	2,322	565	85	36	477
Shortleaf pine					
Softwood	6,440	4,502	461	80	2,393
Hardwood	1,782	502	61	5	304
Virginia pine					
Softwood	4,790	4,023	361	78	1,193
Hardwood	1,280	422	57	63	156
Oak-pine					
Softwood	1,966	1,352	298	122	678
Hardwood	3,986	1,896	353	151	1,023
Oak-hickory					
Softwood	198	191	83	13	126
Hardwood	4,956	2,873	664	208	2,056
Oak-gum-cypress					
Softwood	81	266	41	5	99
Hardwood	5,444	3,880	676	193	2,677
All types					
Softwood	1,610	2,637	286	58	1,117
Hardwood	4,472	1,531	350	113	1,195

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1956

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[3]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Loblolly pine										
Softwood	20.5	0.2	17.8	0.2	7.3	0.4	0.5	--	11.2	0.3
Hardwood	8.0	1.7	3.8	0.9	1.4	0.5	0.3	(4/)	2.7	0.7
Shortleaf pine										
Softwood	17.1	0.3	21.6	0.4	7.7	0.8	0.6	0.5	13.3	0.6
Hardwood	9.1	2.2	3.3	0.8	1.2	0.5	(4/)	0.3	2.3	0.7
Virginia pine										
Softwood	10.4	--	18.3	1.9	7.4	2.8	0.4	1.3	7.8	2.1
Hardwood	8.2	4.1	1.9	1.2	1.2	0.2	0.6	0.5	1.2	0.6
Oak-pine										
Softwood	6.2	0.5	5.3	0.1	3.4	0.2	0.7	0.5	3.7	0.2
Hardwood	12.4	3.5	9.9	2.1	4.0	1.9	0.8	0.9	5.7	2.0
Oak-hickory										
Softwood	0.8	(4/)	1.0	(4/)	0.9	(4/)	0.3	0.1	0.9	(4/)
Hardwood	17.0	3.1	14.2	2.9	7.0	2.0	0.8	0.9	10.2	2.4
Oak-gum-cypress										
Softwood	0.3	--	0.7	--	0.2	0.1	(4/)	--	0.3	(4/)
Hardwood	18.3	4.8	18.3	3.6	7.0	3.1	1.4	1.8	11.9	3.5
All types										
Softwood	4.3	0.1	12.1	0.4	4.2	0.5	0.4	0.5	6.0	0.4
Hardwood	15.3	3.3	7.9	1.8	4.0	1.4	0.6	0.7	6.1	1.6

1/ Sound wood and bark.

2/ Sound trees.

3/ Cull trees.

4/ Less than 0.05 cord per acre.

Table 16.--Number of trees[1] by species group, quality class, and tree size, 1956

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	719,902	268,215	75,180	4,921	1,068,218
Sound culls	(2/)	28,865	7,665	349	36,879
Rotten culls	(2/)	143	88	45	276
Total	719,902	297,223	82,933	5,315	1,105,373
Other softwoods:					
Sound trees	81,806	8,800	920	38	91,564
Sound culls	(2/)	895	326	--	1,221
Rotten culls	(2/)	--	11	--	11
Total	81,806	9,695	1,257	38	92,796
Soft hardwoods:					
Sound trees	373,096	83,861	14,062	5,246	476,265
Sound culls	(2/)	29,071	2,590	1,281	32,942
Rotten culls	(2/)	5,119	793	613	6,525
Total	373,096	118,051	17,445	7,140	515,732
Hard hardwoods:					
Sound trees	623,658	158,206	27,031	9,708	818,603
Sound culls	(2/)	54,710	3,545	1,877	60,132
Rotten culls	(2/)	5,996	1,580	1,225	8,801
Total	623,658	218,912	32,156	12,810	887,536
All species	1,798,462	643,881	133,791	25,303	2,601,437

[1] All trees 1.0 inch d.b.h. and larger.

[2] Data not collected.

Table 17.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1956

(In thousand acres)

Forest type	No planting required	Suitable for machine planting	Hand planting required	All classes
Loblolly pine	80.0	--	--	80.0
Shortleaf pine	144.5	--	7.2	151.7
Virginia pine	184.8	2.7	5.7	193.2
White pine	4.3	--	--	4.3
Oak-pine	114.3	--	--	114.3
Oak-hickory	189.1	--	12.5	201.6
All types	717.0	2.7	25.4	745.1
Percent	96.2	0.4	3.4	100.0

1/ Excludes 9,200 acres on which planting would be impractical because of existing dense cover of brush.

Table 18.--Stocking on commercial forest area by forest type and tree-size class, 1956

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	4.7	61.0	114.1	502.5	682.3
Shortleaf pine	15.6	76.3	204.6	1,056.2	1,352.7
Virginia pine	29.6	106.6	129.3	324.1	589.6
White pine	4.3	--	--	6.6	10.9
Oak-pine	2.2	88.9	245.6	392.1	728.8
Oak-hickory	34.6	282.7	698.8	914.3	1,930.4
Oak-gum-cypress	34.4	132.6	165.3	194.1	526.4
All types	125.4	748.1	1,557.7	3,389.9	5,821.1
Percent	2.2	12.8	26.8	58.2	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	277.8	224.7	110.7	69.1	682.3
Shortleaf pine	547.7	413.7	235.6	155.7	1,352.7
Virginia pine	391.6	126.7	42.1	29.2	589.6
White pine	4.3	6.6	--	--	10.9
Oak-pine	339.4	309.1	72.4	7.9	728.8
Oak-hickory	709.9	901.2	287.7	31.6	1,930.4
Oak-gum-cypress	186.0	219.1	85.3	36.0	526.4
All types	2,456.7	2,201.1	833.8	329.5	5,821.1
Percent	42.2	37.8	14.3	5.7	100.0

Table 19.--Net annual growth by species group and unit of measure, 1956

Species group	Sawtimber	Growing stock	
	Million bd.-ft.	Million cu. ft.	Thousand cords
So. yellow pines	443.8	130.3	2,033
Other softwoods	2.0	1.3	21
Soft hardwoods	173.5	55.5	832
Hard hardwoods	206.0	73.2	1,106
All species	825.3	260.3	3,992

Table 20.--Net annual growth percentages for each species group and unit of measure, 1956

Unit of measure	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	6.89	3.20	6.50	4.81	6.13
Cubic feet	5.39	3.65	5.90	4.42	5.15
Standard cords	5.92	4.23	6.47	4.85	5.66

Table 21.--Average growth per acre by forest type and stand-size class, 1956

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
SAWTIMBER (In board-feet)				
Loblolly pine	483	113	2	254
Shortleaf pine	345	84	14	200
Virginia pine	265	36	6	84
Oak-pine	239	67	13	116
Oak-hickory	220	72	12	132
Oak-gum-cypress	264	47	12	152
All types	292	74	11	157
GROWING STOCK (In standard cords)				
Loblolly pine	1.5	1.1	0.2	1.2
Shortleaf pine	1.2	0.9	0.1	1.0
Virginia pine	0.8	0.7	0.1	0.5
Oak-pine	0.8	0.5	0.1	0.6
Oak-hickory	0.8	0.5	0.1	0.6
Oak-gum-cypress	0.9	0.6	0.1	0.7
All types	1.0	0.7	0.1	0.7
GROWING STOCK (In cubic feet)				
Loblolly pine	114.4	70.2	11.5	81.7
Shortleaf pine	88.7	59.3	6.0	67.2
Virginia pine	59.4	42.8	5.9	34.8
Oak-pine	59.7	35.8	6.5	39.2
Oak-hickory	56.2	35.9	6.8	41.9
Oak-gum-cypress	71.7	39.6	8.2	50.8
All types	73.7	46.4	7.1	52.3

Table 22.--Average annual drain by tree-size class and species group

SAWTIMBER (In million board-feet)

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
Small sawtimber	397.2	2.1	32.4	48.2	479.9
Large sawtimber	112.0	1.9	48.2	76.3	238.4
All trees	509.2	4.0	80.6	124.5	718.3

GROWING STOCK (In thousand cords)

Tree-size class	Pine	Other	Soft hardwoods	Hard hardwoods	All species
Pole trees	603	12	96	128	839
Small sawtimber	1,139	5	96	143	1,383
Large sawtimber	255	4	115	187	561
All trees	1,997	21	307	458	2,783

GROWING STOCK (In million cubic feet)

Tree-size class	Pine	Other	Soft hardwoods	Hard hardwoods	All species
Pole trees	38.3	0.9	6.3	8.6	54.1
Small sawtimber	85.2	0.5	7.4	10.9	104.0
Large sawtimber	20.9	0.3	9.4	15.3	45.9
All trees	144.4	1.7	23.1	34.8	204.0

Table 23.--Net annual change in volume by species group, 1956

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
SAWTIMBER (In million board-feet)					
Net volume, Jan. 1, 1956	6,442.8	61.9	2,671.1	4,285.5	13,461.3
Total growth	497.2	2.5	186.1	247.1	932.9
Mortality	53.4	0.5	12.6	41.1	107.6
Net growth	443.8	2.0	173.5	206.0	825.3
Timber cut	509.2	4.0	80.6	124.5	718.3
Loss or gain	-65.4	-2.0	+92.9	+81.5	+107.0
Net volume, Dec. 31, 1956	6,377.4	59.9	2,764.0	4,367.0	13,568.3
Percent change	-1.0	-3.2	+3.5	+1.9	+0.8
GROWING STOCK (In thousand cords)					
Net volume, Jan. 1, 1956	34,357	497	12,867	22,803	70,524
Total growth	2,257	24	906	1,248	4,435
Mortality	224	3	74	142	443
Net growth	2,033	21	832	1,106	3,992
Timber cut	1,997	21	307	458	2,783
Loss or gain	+36	0	+525	+648	+1,209
Net volume, Dec. 31, 1956	34,393	497	13,392	23,451	71,733
Percent change	+0.1	0.0	+4.1	+2.8	+1.7
GROWING STOCK (In million cubic feet)					
Net volume, Jan. 1, 1956	2,417.2	36.1	942.4	1,653.9	5,049.6
Total growth	146.6	1.5	60.9	83.8	292.8
Mortality	16.3	0.2	5.4	10.6	32.5
Net growth	130.3	1.3	55.5	73.2	260.3
Timber cut	144.4	1.7	23.1	34.8	204.0
Loss or gain	-14.1	-0.4	+32.4	+38.4	+56.3
Net volume, Dec. 31, 1956	2,403.1	35.7	974.8	1,692.3	5,105.9
Percent change	-0.6	-1.1	+3.4	+2.3	+1.1

Table 24.--County area by broad use class, 1956

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alamance	277.8	143.9	1.8	--	132.1	47.9
Alexander	165.7	74.9	3.4	--	87.4	53.9
Anson	343.0	133.3	3.2	(2/)	206.5	60.8
Cabarrus	230.4	141.2	0.2	--	89.0	38.7
Caswell	278.4	107.0	0.7	--	170.7	61.5
Catawba	263.7	158.9	5.4	--	99.4	38.5
Chatham	452.5	96.8	1.2	--	354.5	78.6
Cleveland	298.2	182.8	0.9	(2/)	114.5	38.5
Davidson	358.4	177.3	10.5	--	170.6	49.0
Davie	169.0	92.1	0.9	--	76.0	45.2
Durham	192.0	73.5	0.8	--	117.7	61.6
Forsyth	271.4	135.1	1.2	1.3	133.8	49.5
Franklin	316.1	127.9	0.7	--	187.5	59.4
Gaston	232.3	121.0	6.8	--	104.5	46.3
Granville	347.5	127.7	1.6	--	218.2	63.1
Guilford	417.3	237.2	3.0	0.1	177.0	42.7
Iredell	380.2	199.5	2.8	--	177.9	47.1
Lincoln	197.8	108.6	1.1	--	88.1	44.8
Mecklenburg	351.4	181.6	6.7	0.7	162.4	47.1
Montgomery	319.4	59.9	8.1	(2/)	251.4	80.8
Orange	254.7	97.9	0.2	--	156.6	61.5
Person	256.0	103.7	0.6	--	151.7	59.4
Polk	150.4	38.4	0.7	--	111.3	74.3
Randolph	512.6	175.5	1.0	--	336.1	65.7
Rockingham	366.1	169.8	0.8	--	195.5	53.5
Rowan	337.3	177.6	13.9	(2/)	145.8	45.1
Rutherford	363.5	145.9	2.1	(2/)	215.5	59.6
Stanly	259.8	144.9	6.0	3.8	105.1	41.4
Stokes	293.8	107.5	0.5	3.9	181.9	62.0
Surry	344.3	129.9	1.2	0.9	212.3	61.9
Union	411.5	225.1	0.4	(2/)	186.0	45.2
Vance	172.1	75.9	11.6	--	84.6	52.7
Wake	554.9	240.0	2.8	5.2	306.9	55.6
Warren	284.8	79.5	1.4	4.5	199.4	70.4
Yadkin	214.4	100.1	1.1	--	113.2	53.1
Unit total	10,638.7	4,691.9	105.3	20.4	5,821.1	55.3

1/ Gross area from Bureau of the Census, 1950.

2/ Less than 50 acres.

Table 25.--Ownership of commercial forest land by county, 1956

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alamance	132.0	99.9	--	--	--	0.1	0.1	0.1
Alexander	87.4	100.0	--	--	--	(1/)	(1/)	--
Anson	206.3	99.9	--	--	0.1	0.1	0.2	0.1
Cabarrus	88.6	99.6	--	--	--	0.4	0.4	0.4
Caswell	158.3	92.7	12.3	--	--	0.1	12.4	7.3
Catawba	99.2	99.8	--	--	(1/)	0.2	0.2	0.2
Chatham	352.8	99.5	--	--	1.6	0.1	1.7	0.5
Cleveland	114.5	100.0	--	--	--	(1/)	(1/)	--
Davidson	169.4	99.3	1.0	--	--	0.2	1.2	0.7
Davie	76.0	100.0	--	--	(1/)	(1/)	(1/)	--
Durham	112.7	95.8	--	1.2	3.4	0.4	5.0	4.2
Forsyth	133.6	99.9	--	--	--	0.2	0.2	0.1
Franklin	187.5	100.0	--	--	(1/)	(1/)	(1/)	--
Gaston	104.4	99.9	--	--	(1/)	0.1	0.1	0.1
Granville	204.7	93.8	--	2.5	10.9	0.1	13.5	6.2
Guilford	172.4	97.4	--	--	0.2	4.4	4.6	2.6
Iredell	177.7	99.9	--	--	(1/)	0.2	0.2	0.1
Lincoln	88.1	100.0	--	--	(1/)	(1/)	(1/)	--
Mecklenburg	160.7	99.0	--	--	0.1	1.6	1.7	1.0
Montgomery	217.7	86.6	33.7	--	--	(1/)	33.7	13.4
Orange	154.9	98.9	--	--	1.7	--	1.7	1.1
Person	151.4	99.8	--	--	--	0.3	0.3	0.2
Polk	110.4	99.2	--	--	--	0.9	0.9	0.8
Randolph	327.4	97.4	8.1	--	(1/)	0.6	8.7	2.6
Rockingham	195.4	99.9	--	--	--	0.1	0.1	0.1
Rowan	144.9	99.4	--	0.2	0.5	0.2	0.9	0.6
Rutherford	215.4	100.0	--	--	--	0.1	0.1	(1/)
Stanly	105.1	100.0	--	--	--	--	--	--
Stokes	181.9	100.0	--	--	--	--	--	--
Surry	211.7	99.7	--	--	(1/)	0.6	0.6	0.3
Union	185.8	99.9	--	--	(1/)	0.2	0.2	0.1
Vance	78.5	92.8	--	5.9	(1/)	0.2	6.1	7.2
Wake	304.8	99.3	--	--	1.7	0.4	2.1	0.7
Warren	198.6	99.6	--	0.7	(1/)	0.1	0.8	0.4
Yadkin	113.1	99.9	--	--	0.1	(1/)	0.1	0.1
Unit total	5,723.3	98.3	55.1	10.5	20.3	11.9	97.8	1.7

1/ Less than 50 acres, or 0.05 percent.

Table 26.--Net volume[1] of sawtimber by county and species group, 1956

(In million board-feet)

County	Softwoods[2]	Yellow-poplar and sweetgum[3]	Oaks and other hard hardwoods	All species
Alamance	156.7	79.1	104.3	340.1
Alexander	81.1	16.1	76.6	173.8
Anson	348.4	118.3	46.0	512.7
Cabarrus	96.4	38.1	121.3	255.8
Caswell	228.5	88.7	181.6	498.8
Catawba	111.1	25.0	88.3	224.4
Chatham	470.9	221.6	255.4	947.9
Cleveland	201.8	103.8	25.4	331.0
Davidson	175.6	114.7	204.3	494.6
Davie	50.0	36.1	56.9	143.0
Durham	115.3	115.6	143.3	374.2
Forsyth	83.3	65.8	58.2	207.3
Franklin	386.2	127.7	225.0	738.9
Gaston	127.6	43.0	37.3	207.9
Granville	394.9	186.0	122.0	702.9
Guilford	206.6	129.0	153.2	488.8
Iredell	142.1	62.5	204.5	409.1
Lincoln	65.9	13.6	51.9	131.4
Mecklenburg	250.0	59.3	145.6	454.9
Montgomery	257.8	36.7	177.3	471.8
Orange	200.0	81.6	155.8	437.4
Person	271.5	59.9	87.3	418.7
Polk	81.2	16.7	47.6	145.5
Randolph	235.1	56.3	249.0	540.4
Rockingham	26.1	64.0	83.9	174.0
Rowan	109.7	111.1	161.0	381.8
Rutherford	127.4	26.2	156.5	310.1
Stanly	121.7	17.9	100.8	240.4
Stokes	134.2	51.5	128.7	314.4
Surry	188.8	41.1	87.4	317.3
Union	135.9	44.9	61.0	241.8
Vance	118.7	36.1	30.1	184.9
Wake	548.4	266.1	203.2	1,017.7
Warren	104.2	106.1	167.9	378.2
Yadkin	151.6	10.9	86.9	249.4
Unit total	6,504.7	2,671.1	4,285.5	13,461.3

[1] Log scale, International 1/4-inch rule.

[2] Includes white pine and redcedar.

[3] Includes other soft hardwoods.

Table 27.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group, 1956

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Alamance	150.0	6.7	--	71.4	66.1	45.9
Alexander	78.8	2.3	--	42.3	36.9	13.5
Anson	212.1	65.1	71.2	85.7	54.4	24.2
Cabarrus	86.5	9.9	--	67.5	46.3	45.6
Caswell	198.3	30.2	--	114.2	94.0	62.1
Catawba	101.6	9.5	--	52.2	47.2	13.9
Chatham	378.4	34.0	58.5	260.5	89.0	127.5
Cleveland	176.4	19.2	6.2	48.8	33.5	46.9
Davidson	152.8	13.6	9.2	161.9	94.4	62.7
Davie	47.4	2.6	--	51.2	31.2	10.6
Durham	61.6	27.3	26.4	87.5	80.7	90.7
Forsyth	63.0	20.3	--	49.2	37.4	37.4
Franklin	177.6	148.2	60.4	157.0	81.7	114.0
Gaston	118.7	8.9	--	45.5	17.5	17.3
Granville	285.0	65.3	44.6	130.9	66.5	110.6
Guilford	168.8	37.8	--	144.4	65.9	71.9
Iredell	120.9	12.0	9.2	114.7	102.8	49.5
Lincoln	56.4	9.5	--	38.8	22.8	3.9
Mecklenburg	207.1	16.8	26.1	65.5	62.8	76.6
Montgomery	217.9	30.5	9.4	143.5	42.3	28.2
Orange	176.5	16.5	7.0	125.2	76.0	36.2
Person	255.5	16.0	--	73.6	40.5	33.1
Polk	61.9	14.1	5.2	43.1	16.1	5.1
Randolph	204.0	31.1	--	245.5	44.3	15.5
Rockingham	21.6	4.5	--	68.3	20.7	58.9
Rowan	92.9	10.8	6.0	116.7	82.4	73.0
Rutherford	122.8	4.6	--	104.1	56.0	22.6
Stanly	93.8	11.8	16.1	80.6	34.0	4.1
Stokes	103.1	23.2	7.9	65.6	56.7	57.9
Surry	120.5	48.7	19.6	64.1	29.5	34.9
Union	135.9	--	--	49.5	49.9	6.5
Vance	106.3	7.3	5.1	38.3	17.1	10.8
Wake	341.5	162.9	44.0	198.9	140.6	129.8
Warren	84.2	20.0	--	129.3	87.7	57.0
Yadkin	133.3	18.3	--	53.5	30.1	14.2
Unit total	5,113.1	959.5	432.1	3,389.0	1,955.0	1,612.6

[1] Log scale, International 1/4-inch rule.

Table 28.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1956

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alamance	826	51	73	3	223	140	302	200	1,818
Alexander	600	37	14	--	50	32	175	150	1,058
Anson	1,284	404	11	4	198	233	238	81	2,453
Cabarrus	428	98	25	2	114	76	335	245	1,323
Caswell	971	159	7	--	437	161	357	403	2,495
Catawba	524	68	--	--	29	50	294	163	1,128
Chatham	1,790	379	34	--	705	409	1,008	429	4,754
Cleveland	870	165	--	--	183	212	175	57	1,662
Davidson	1,004	93	18	--	325	214	491	353	2,498
Davie	336	21	18	2	151	53	178	109	868
Durham	619	137	--	3	259	240	229	294	1,781
Forsyth	417	78	14	--	267	107	298	121	1,302
Franklin	958	559	8	--	326	257	431	455	2,994
Gaston	624	67	2	--	168	87	196	63	1,207
Granville	1,336	430	7	--	506	344	539	209	3,371
Guilford	778	191	14	--	326	226	507	260	2,302
Iredell	451	119	27	4	251	122	340	403	1,717
Lincoln	446	50	1	--	138	29	200	96	960
Mecklenburg	1,048	221	15	--	120	104	278	296	2,082
Montgomery	1,457	186	2	--	199	75	1,120	270	3,309
Orange	1,071	145	--	--	249	143	481	332	2,421
Person	1,259	118	12	--	328	101	224	157	2,199
Polk	388	63	3	--	36	30	244	76	840
Randolph	1,021	153	81	--	325	78	1,483	315	3,456
Rockingham	227	11	3	--	165	100	252	170	928
Rowan	626	73	28	12	239	203	385	323	1,889
Rutherford	1,051	67	--	--	117	69	759	272	2,335
Stanly	628	109	--	--	107	35	391	179	1,449
Stokes	505	139	--	--	264	98	609	256	1,871
Surry	851	195	17	20	101	62	304	161	1,711
Union	896	32	8	--	132	86	369	126	1,649
Vance	552	111	--	--	110	78	116	57	1,024
Wake	1,503	692	--	--	487	527	623	419	4,251
Warren	685	76	--	--	156	202	469	364	1,952
Yadkin	712	118	5	--	81	12	378	161	1,467
Unit total	28,742	5,615	447	50	7,872	4,995	14,778	8,025	70,524

[1] Sound wood and bark.

Table 28.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1956 (cont.)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alamance	19	5	--	--	44	30	30	30	158
Alexander	42	17	--	--	12	10	65	24	170
Anson	32	--	11	--	51	34	86	68	282
Cabarrus	1	10	3	2	23	48	84	43	214
Caswell	35	10	--	--	58	70	81	100	354
Catawba	60	--	--	--	16	1	47	21	145
Chatham	18	27	--	--	158	115	221	240	779
Cleveland	22	3	--	--	57	43	75	51	251
Davidson	13	--	--	--	39	42	70	71	235
Davie	9	--	--	--	29	14	16	14	82
Durham	91	4	--	--	43	66	52	86	342
Forsyth	96	--	4	--	23	37	35	62	257
Franklin	20	--	--	--	108	42	98	76	344
Gaston	74	10	--	--	36	6	64	24	214
Granville	24	4	--	--	48	57	97	58	288
Guilford	8	12	--	--	64	16	48	70	218
Iredell	104	10	--	--	79	11	202	82	488
Lincoln	22	7	--	--	16	47	60	42	194
Mecklenburg	20	16	19	--	77	62	68	87	349
Montgomery	23	8	--	--	115	36	132	112	426
Orange	4	4	2	--	63	31	46	40	190
Person	51	--	9	--	82	40	25	33	240
Polk	142	21	1	--	45	5	134	119	467
Randolph	64	7	--	--	182	37	327	130	747
Rockingham	489	14	--	--	123	73	112	46	857
Rowan	22	12	5	--	60	14	71	45	229
Rutherford	50	3	--	--	90	24	142	211	520
Stanly	68	--	2	--	48	2	88	47	255
Stokes	34	18	--	--	51	22	149	65	339
Surry	244	28	--	--	18	33	348	76	747
Union	--	--	13	--	47	72	131	114	377
Vance	25	5	1	--	45	72	38	22	208
Wake	59	5	2	--	59	65	133	63	386
Warren	14	--	--	--	73	144	60	44	335
Yadkin	109	3	--	--	73	6	60	43	294
Unit total	2,108	263	72	2	2,155	1,427	3,495	2,459	11,981

[1] Sound wood and bark.

Table 29.--Average annual sawtimber drain by county and species group[1]

(In million board-feet)

County	Yellow pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alamance	1.6	--	2.3	8.2	12.1
Alexander	9.8	--	1.2	1.6	12.6
Anson	14.5	--	5.9	11.2	31.6
Cabarrus	6.3	--	1.3	1.8	9.4
Caswell	--	--	--	0.7	0.7
Catawba	16.8	--	0.3	3.6	20.7
Chatham	19.0	0.2	--	--	19.2
Cleveland	9.2	--	--	1.0	10.2
Davidson	1.4	--	--	--	1.4
Davie	8.0	0.2	0.2	--	8.4
Durham	12.1	--	2.5	1.5	16.1
Forsyth	12.5	0.2	7.0	6.0	25.7
Franklin	33.1	--	1.1	0.5	34.7
Gaston	12.3	--	1.1	--	13.4
Granville	20.8	--	6.3	9.0	36.1
Guilford	7.3	--	2.5	15.4	25.2
Iredell	17.2	--	2.5	10.0	29.7
Lincoln	6.0	0.4	--	1.9	8.3
Mecklenburg	15.0	0.5	--	--	15.5
Montgomery	19.6	--	2.4	7.3	29.3
Orange	3.5	--	3.3	--	6.8
Person	9.2	--	2.0	0.8	12.0
Polk	12.9	--	0.6	1.4	14.9
Randolph	36.9	--	2.9	5.8	45.6
Rockingham	16.9	--	1.1	1.9	19.9
Rowan	2.7	2.5	6.7	2.9	14.8
Rutherford	10.8	--	--	2.9	13.7
Stanly	1.3	--	--	0.8	2.1
Stokes	7.2	--	1.1	7.6	15.9
Surry	8.5	--	1.4	2.6	12.5
Union	11.0	--	11.5	0.5	23.0
Vance	11.7	--	0.3	0.7	12.7
Wake	80.6	--	12.2	11.9	104.7
Warren	44.3	--	0.9	--	45.2
Yadkin	9.2	--	--	5.0	14.2
Unit total	509.2	4.0	80.6	124.5	718.3

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 30.--Average annual drain on growing stock by county and species group[1]

(In thousand cords)

County	Yellow pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alamance	5	2	7	21	35
Alexander	77	--	4	4	85
Anson	80	--	14	31	125
Cabarrus	21	1	6	7	35
Caswell	18	--	6	9	33
Catawba	68	1	6	19	94
Chatham	76	2	--	--	78
Cleveland	28	--	--	4	32
Davidson	5	--	--	--	5
Davie	31	1	2	--	34
Durham	51	1	13	10	75
Forsyth	40	--	21	30	91
Franklin	124	--	11	10	145
Gaston	50	--	5	6	61
Granville	56	1	32	31	120
Guilford	36	--	7	38	81
Iredell	78	2	8	36	124
Lincoln	33	1	1	5	40
Mecklenburg	46	1	--	--	47
Montgomery	86	--	9	24	119
Orange	24	--	9	--	33
Person	54	--	7	5	66
Polk	46	--	7	10	63
Randolph	120	1	18	32	171
Rockingham	64	1	13	13	91
Rowan	8	6	22	10	46
Rutherford	52	--	--	9	61
Stanly	9	--	--	4	13
Stokes	32	--	6	26	64
Surry	36	--	5	8	49
Union	43	--	32	4	79
Vance	37	--	1	4	42
Wake	272	--	31	32	335
Warren	158	--	3	--	161
Yadkin	33	--	1	16	50
Unit total	1,997	21	307	458	2,783

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[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

> Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is shortleaf, pitch, or Virginia pine species. In mixtures the predominating species determines the type.
>
> White pine: Forests in which 50 percent or more of the stand is eastern white pine and hemlock, either singly or in combination.

Oak-pine type: Forests in which 50 percent or more of the stand is hardwoods, usually upland oaks, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of oak, hickory, yellow-poplar, soft maple, basswood, sweet birch, ash, and other hardwood species, except in cases where yellow pines made up 25 to 49 percent and the stand was classified as oak-pine type.

Oak-gum cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, elm, maple, in mixture with cypress and other associated species, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber. To be merchantable all saw logs must be at least 8 feet long and at least 50 percent sound. They must also meet the following requirements:

Softwood logs[1] must have a scaling diameter of 6 inches or larger, and sweep or crook must not exceed two-thirds of the scaling diameter.

Hardwood logs must have a scaling diameter of 8 inches or larger and must pass specifications[2] for standard lumber logs, or tie and timber logs.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber-size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes shortleaf, loblolly, Virginia, and longleaf pine.

Other softwoods: White pine, hemlock, and eastern redcedar.

Soft hardwoods: Blackgum, sweetgum, yellow-poplar, soft maple, elm, sycamore, hackberry, buckeye, and willow.

Hard hardwoods: All of the oaks, hickories, ash, beech, birch, hard maple, black locust, black walnut, holly, dogwood, persimmon, and sourwood.

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[1] For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Experiment Station, 18 pp. 1953.

[2] For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, which are at least 4.0 inches in diameter inside bark, is shown separately for all sawtimber-size hardwoods.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The estimated volume of net growth includes the growth on the present growing stock, the growth on trees which died or were cut during the year, and the ingrowth resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on growth of sound trees. Growth of "other material" is not included.

> In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.
>
> In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1956 survey provided an estimate of the total forest area with a standard error of ±0.8 percent. The probabilities are two out of three that the actual forest area is within ±0.8 percent of the estimated acreage. The standard error per million acres was ±1.9 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±2.4 percent, or ±5.4 percent per billion cubic feet. Here again, the probabilities are two out of three that the actual volume does not vary from the estimated volume by more than this percentage. The error of the volume in standard cords was not computed, but it should be approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±3.0 percent.

Growth.--Estimates of timber growth are based on measurements of radial growth on 2,985 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number and size of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding date of inventory were recorded, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±8.7 percent, or ±3.9 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors on county data are shown below:

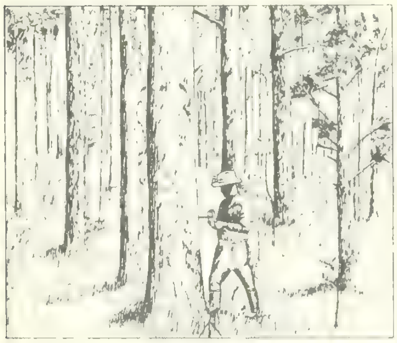
Item	Percent of error	
	Low	High
Forest area	±3.7	±9.0
Growing stock volume	±9.2	±13.9
Board-foot volume	±11.5	±15.4

HOW THE FOREST INVENTORY IS MADE

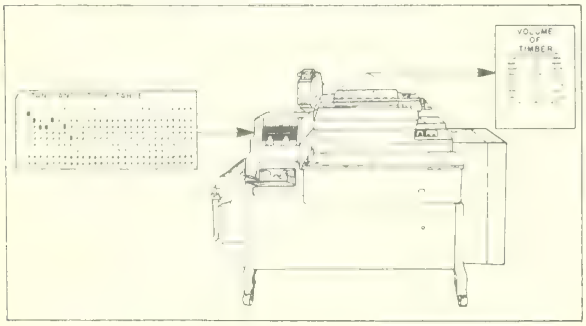
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

Forest Survey Reports Published Since 1945

Forest Statistics:

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
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No. 44 - Forest Statistics for Georgia, 1951-53
No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955
No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955

Pulpwood Production:

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
No. 23 - 1946 Pulpwood Production by County in the Southeast
No. 27 - 1947 Pulpwood Production by County in the Southeast
No. 29 - 1948 Pulpwood Production by County in the Southeast
*No. 35 - 1949 Pulpwood Production in the South (out of print)
*No. 69 - Pulpwood Production in the South, 1950
*No. 38 - 1951 Pulpwood Production in the South
*No. 72 - 1952 Pulpwood Production in the South
*No. 43 - 1953 Pulpwood Production in the South
*No. 76 - 1954 Pulpwood Production in the South
*No. 47 - 1955 Pulpwood Production in the South

Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

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*Published in cooperation with the Southern Forest Experiment Station, New Orleans, La.

Agriculture--Asheville

FOREST SURVEY RELEASE NO. 49 MARCH 1957

AGRICULTURAL REFERENCE DEPARTMENT

NORTH CAROLINA'S TIMBER SUPPLY, 1955

by

Robert W. Larson

HIGHLIGHTS

In many ways the timber supply outlook in North Carolina is better now than in 1938 when the first Forest Survey was completed. The State now has 1.2 million acres more forest land than in 1938. It has a third more hardwood growing stock and 20 percent more yellow-pine pole timber. In other ways, the outlook is not as good. North Carolina has 1.6 million acres less area in pine and oak-pine type. The volume of yellow-pine growing stock barely held its own, and pine sawtimber dropped 6 percent. The volume in cull trees increased 36 percent.

Between surveys, growth increased substantially, while the cut decreased slightly. Growth now exceeds the cut for all important species groups and in all size classes. But the less desirable timber is increasing so much faster than the kind of timber forest industries use that North Carolina faces a possible shortage of space for growing the pine and high-quality hardwoods industries will need in the future.

U. S. Department of Agriculture
Forest Service
Southeastern Forest Experiment Station
Joseph F. Pechanec, Director

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The first inventory of forest resources in North Carolina by the Forest Survey was made during the period 1937-38, and these findings have been published. The present report contains the findings of a resurvey of North Carolina's timber resources completed January 1956. It shows the area of land available for timber production, the volume and kind of timber on this land, how fast the timber is growing, and how fast it is being cut. It also shows the changes that have taken place since the first Survey.

In many instances, figures presented in this report do not agree with those shown for North Carolina in the recent Timber Resource Review. These differences arise from the fact that at the time the data were needed for the TRR report, the regular Forest Survey was completed only in the Southern Coastal Plain. Rough preliminary estimates for the remainder of the State were obtained by taking regular Forest Survey plots in a number of representative counties. The TRR survey was designed to provide reliable regional figures, but the North Carolina estimates had high sampling errors. They may also have contained errors due to sampling only part of the counties. Data presented in the present report are based on a much larger number of ground plots taken in all counties in the State and should be considered more reliable than those shown in the TRR report.

ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges the cooperation of the North Carolina Department of Conservation and Development and Fred H. Claridge, State Forester, for providing personnel and equipment for a portion of the Survey. The Station also wishes to acknowledge the financial assistance provided by The Champion Paper and Fibre Company, Canton, North Carolina, which resulted in employment of an additional field crew and materially increased the rate of survey progress in the western portion of the State. Acknowledgment is also due to the Tennessee Valley Authority for their cooperation in conducting the field work in Buncombe, Cherokee, and Clay Counties.

The Division of Forest Economics is under the direction of James F. McCormack. Collection of the field data was supervised by L. C. Nix and Robert W. Larson. Aerial photo interpretation was done by R. C. Aldrich and William H. B. Haines. Special mensurational studies were made by Mackay B. Bryan. Office compilation was under the supervision of Agnes C. Nichols, assisted by Louise Shuford, Sammy Wenningham, Eunice Gamble, and Camilla Young.

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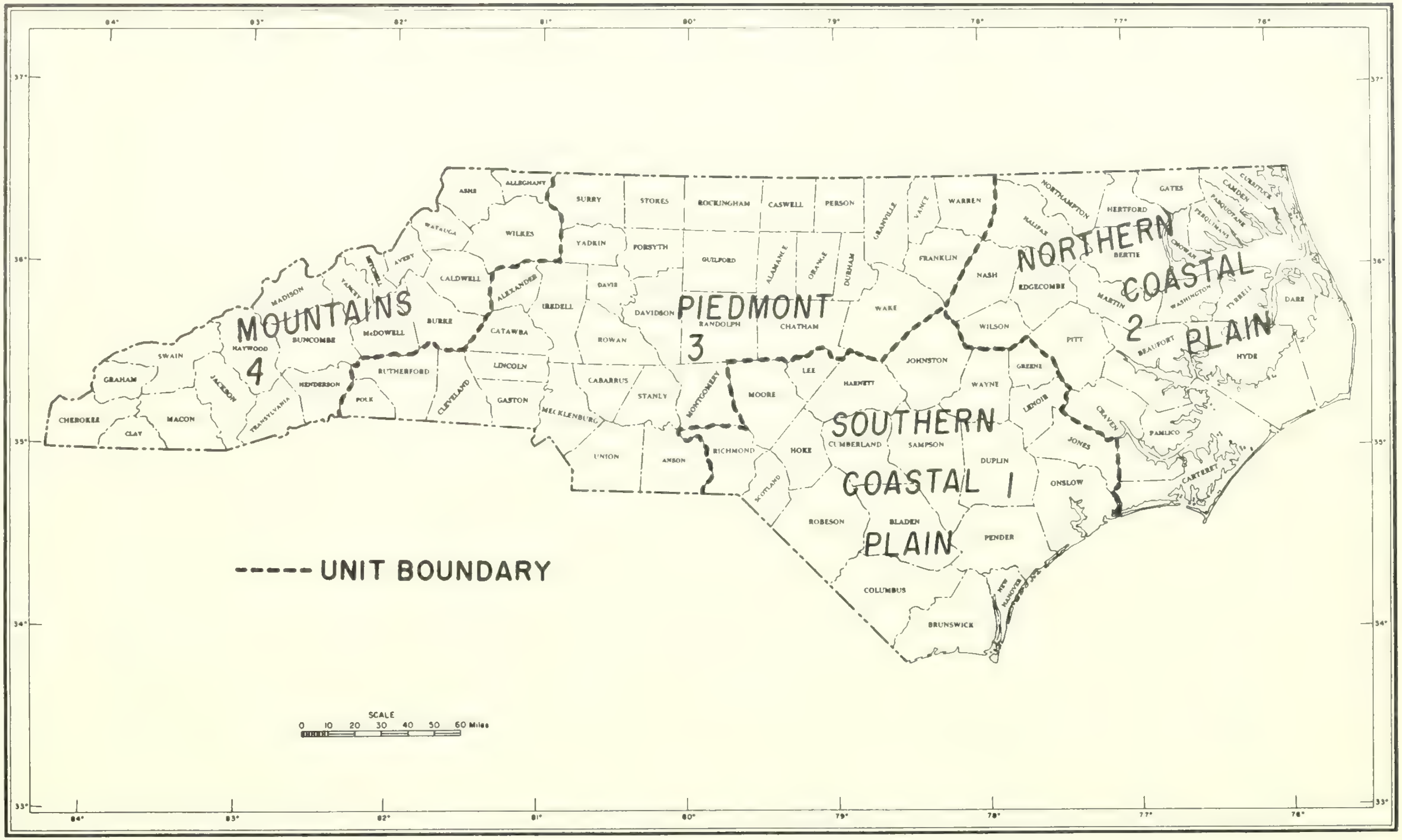

Forest Survey units in North Carolina.

NORTH CAROLINA'S TIMBER SUPPLY, 1955

In the 17 years between forest surveys, many factors, such as changes in land use, timber cutting, growth, forestry practices, natural ecological trends, and undoubtedly others, have contributed to a number of important changes in North Carolina's timber resources. Some of these changes have improved the State's ability to supply forest industries with the amount and kind of timber they need; others have not.

FOREST LAND AND TIMBER VOLUME

More land to grow timber.--One desirable change has been the increase in forest land. Between surveys enough cropland was abandoned and allowed to revert to forest in excess of land cleared to increase the area of commercial forest land from 18.1 million to 19.3 million acres (fig. 1), an increase of 1.2 million acres, or nearly 7 percent (table A). Forest land available for timber production now makes up 62 percent of the land area in the State.

Table A.--Change in commercial forest area

Survey unit	1938	1955	Change	
	Thousand acres	Thousand acres	Thousand acres	Percent
Southern Coastal Plain	5,544.3	5,388.9	-155.4	-2.8
Northern Coastal Plain	4,045.5	4,140.4	+94.9	+2.3
Piedmont	4,968.1	5,821.1	+853.0	+17.2
Mountains	3,543.8	3,991.0	+447.2	+12.6
State	18,101.7	19,341.4	+1,239.7	+6.8

Figure 1.--Seeding in of abandoned farmland with trees increased the area of forest land by 1.2 million acres in the 17 years between forest surveys.

The increase in forest area took place in both the Piedmont and Mountain Units, but mainly in the Piedmont, where the increase amounted to 853,000 acres. Forest area in the Coastal Plain remained about the same; the slight increase in the Northern Coastal Plain just about offset the small decrease in the Southern Coastal Plain.

More timber on the land.--Between surveys, the volume of growing stock in the State increased by 17 percent, or about 32 million cords (table B). Growing stock is volume in trees 5.0 inches and larger that are either now suitable for saw logs or are expected to be saw-log quality when they become large enough. Even with the big increase in forest area, the volume of growing stock per acre increased from 10.5 to 11.5 cords. The number of 2- and 4-inch trees also increased by about 15 percent.

Table B.--Change in volume of all trees 5.0 inches d.b.h. and larger

Species group and class of material	1938	1955	Change	
	Thousand cords	Thousand cords	Thousand cords	Percent
Growing stock:	190,311	222,232	+31,921	+16.8
Yellow pines	96,520	97,634	+1,114	+1.2
Other softwoods	7,998	8,234	+236	+3.0
Soft hardwoods	43,047	56,769	+13,722	+31.9
Hard hardwoods	42,746	59,595	+16,849	+39.4
Culls[1]	30,587	41,491	+10,904	+35.6
All live trees	220,898	263,723	+42,825	+19.4

[1] Exclusive of hardwood limbs.

Largely because of these increases, North Carolina's forest lands are now fairly well stocked, especially in comparison with the Nation and neighboring states. Based on a count of both growing-stock and potential growing-stock trees down to seedling size, 82 percent of the forest land is medium to well stocked. This compares with 74 percent for the Nation and 76 percent for the South. In North Carolina, only 3 percent of the land is less than 10 percent stocked, compared to 9 percent for the Nation and the South.

Less land growing pine.--In 1938, 11.6 million acres supported pine and oak-pine types (table C). This was land on which at least 25 percent of the dominant and codominant trees were pine.

Most of the 1.2-million-acre increase in forest land between surveys was abandoned farmland which seeded in to pine and increased the area of pine type. However, at the same time, cutting of pine in preference to hardwoods along with natural ecological trends reduced the pine component enough in many stands to convert 2.8 million acres of pine and oak-pine type to hardwood type (fig. 2). In 1955, the State ended up with 10.0 million acres of pine and oak-pine type, 1.6 million acres less than in 1938.

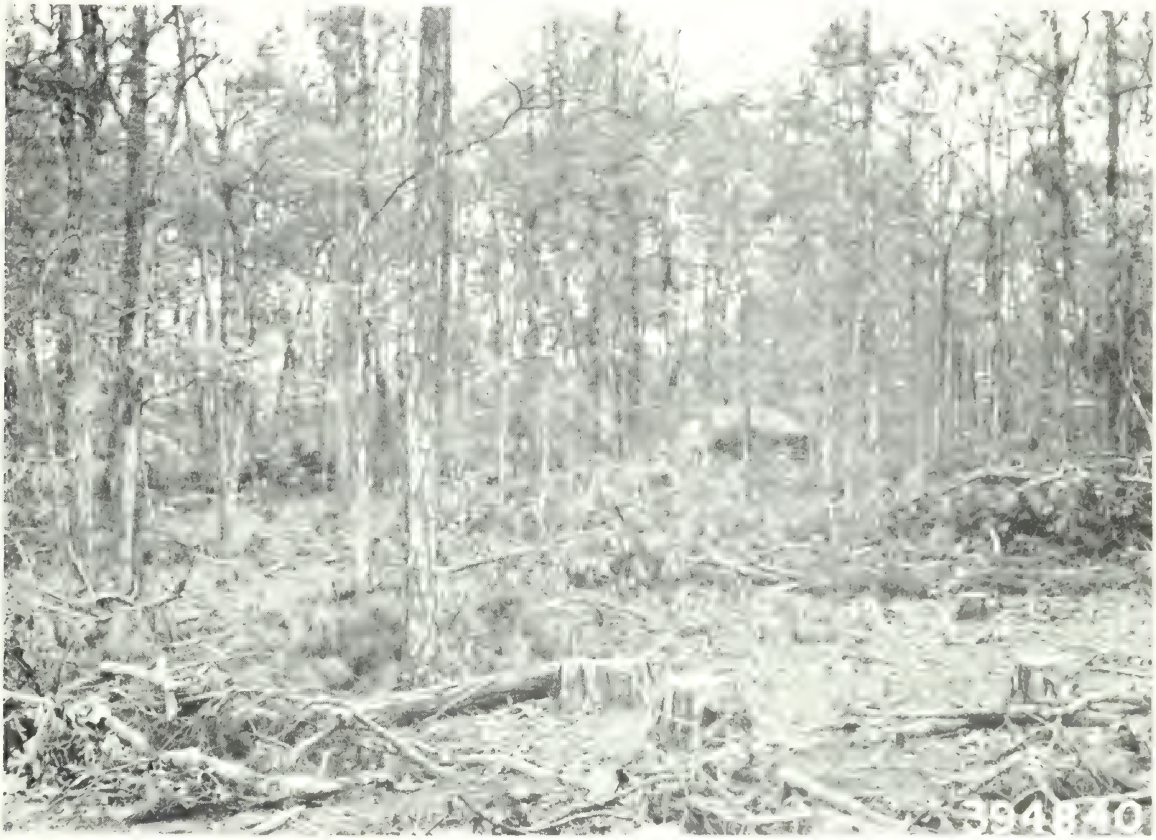

Figure 2.--The practice of cutting out pine and leaving hardwoods contributed heavily to the 2.8-million-acre increase in hardwood type.

Table C.--Change in area of pine and oak-pine type and hardwood type[1]

Survey unit	Pine and oak-pine type			Hardwood type		
	1938	1955	Change	1938	1955	Change
	Thousand acres	Thousand acres	Percent	Thousand acres	Thousand acres	Percent
Southern Coastal Plain	4,197.7	3,454.6	-17.7	1,346.6	1,934.3	+43.6
Northern Coastal Plain	2,803.4	2,391.1	-14.7	1,242.1	1,749.3	+40.8
Piedmont	3,558.4	3,151.4	-11.4	1,409.7	2,669.7	+89.4
Mountains	1,079.6	1,024.8	-5.1	2,464.2	2,966.2	+20.4
State	11,639.1	10,021.9	-13.9	6,462.6	9,319.5	+44.2

[1] Type acreages shown in this table are based on number of dominant and codominant trees and do not agree with areas shown in table 3, which are based on cubic-foot volume.

Pine land better stocked.--The stands that remained pine type now actually contain more pine volume than they did 17 years ago. While the area of pine and oak-pine type decreased, the volume of pine growing stock remained about the same. The average volume per acre is now 9.7 cords, compared to 8.3 cords in 1938. Also, the total number of 2- and 4-inch pines increased by 13 percent.

This increase in pine volume in the face of a decrease in pine type area suggests that most of the conversion to hardwoods took place in stands which had a comparatively small amount of pine in them to start with. A large share of these converted stands are probably on land least suited to growing pine. They include the high-quality sites where hardwoods are especially aggressive, and the relatively unproductive sandhill sites where longleaf pine is slow to reproduce, especially in competition with the dense cover of scrub oak which is frequently present. Thus, these shifts in types have not seriously affected the State's pine-growing capacity.

Pine growing-stock volume remained about the same in all survey units. The 3.4-percent increase in the Northern Coastal Plain, the largest difference, could easily arise from sampling variability in the two surveys.

Less softwood sawtimber.--While North Carolina has about the same volume of softwood growing stock now as in 1938, it has 6 percent less sawtimber (table D). Large sawtimber suffered practically all the decrease; small sawtimber volume remained about the same. Softwood sawtimber now makes up 66 percent of the growing-stock volume, compared to 71 percent 17 years ago. While the remaining pine and oak-pine stands contain more pine volume now than in 1938, the timber on the average is smaller.

Table D.--Change in growing-stock volume by size of timber

Size of timber	Softwoods			Hardwoods		
	1938	1955	Change	1938	1955	Change
	Thousand cords	Thousand cords	Percent	Thousand cords	Thousand cords	Percent
Poletimber	30,631	36,505	+19.2	32,434	50,332	+55.2
Sawtimber:	73,887	69,363	-6.1	53,359	66,032	+23.8
Small	51,542	50,192	-2.6	23,358	32,621	+39.7
Large	22,345	19,171	-14.2	30,001	33,411	+11.4
All sizes	104,518	105,868	+1.3	85,793	116,364	+35.6

Big increase in hardwoods.--The 2.8-million-acre increase in hardwood type area was accompanied by a 36-percent increase in hardwood growing stock, and a 24-percent increase in hardwood sawtimber.

The increase in hardwood volume was not in proportion to the increase in type area, and as a result present hardwood stands do not contain as large an average volume per acre as they did in 1938. A large share of the heavily timbered bottomland hardwoods remaining at the time of the first survey have since been cut out. Also, many of the stands included in the 2.8 million acres converted from pine to hardwood type were heavily cut and now contain mainly small, low-quality hardwoods, many of them culls. The average volume per acre dropped from 12.2 to 11.5 cords.

One especially undesirable trend is the increase in amount of available growing space taken over by low-quality hardwoods. During the period between surveys the volume in cull trees,[1] mostly hardwoods, increased by 36 percent.

TIMBER GROWTH AND CUT

Timber growth up.--A greater area of forest land along with better stocking boosted timber growth by 3.9 million cords, a gain of 43 percent. Total timber growth in 1938 was 9.2 million cords, compared to 13.1 in 1955 (fig. 3). Softwood growth increased 1.1 million cords, and hardwoods, 2.8 million cords. Individual trees are probably not growing any faster; the increase in growth comes mainly from the larger number of small trees which annually attain volume size (ingrowth).

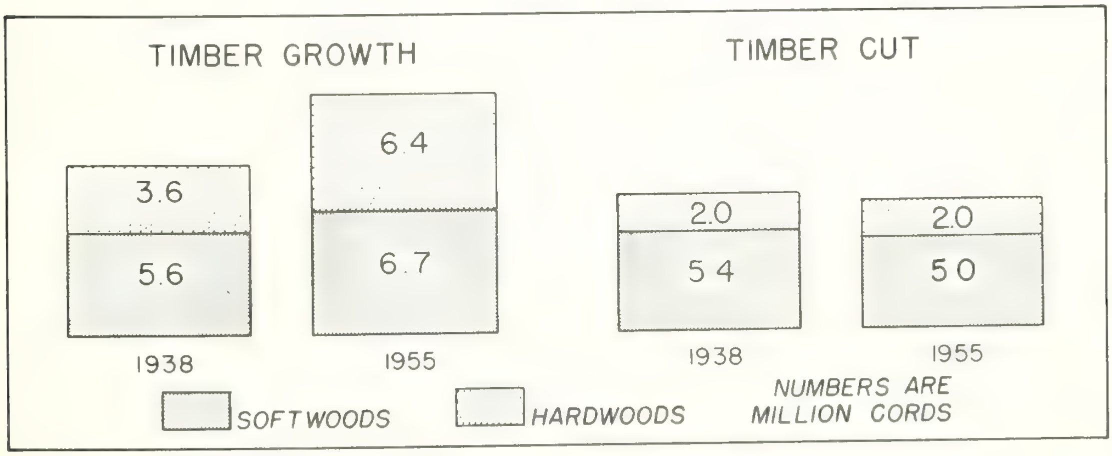

Figure 3.--Timber growth and cut, 1938 and 1955.

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[1] Trees which are now or prospectively too poor in quality to make at least one 12-foot saw log with at least half the volume suitable for lumber.

Timber use down.--In 1938 the total cut from growing stock was 7.4 million cords; in 1955 it was 7.0 million cords, a drop of about 5 percent (fig. 3). Only the use of softwoods decreased; hardwood use remained about the same.

While the total cut has not changed much, there have been some important shifts in the use of the timber harvested (fig. 4). The proportion of timber cut for pulpwood has jumped from 4 percent in 1938 to over 19 percent in 1955. Production in 1955 reached an alltime high of 1.6 million cords (fig. 5). The State now has 5 pulp mills with a daily pulping capacity of about 2,700 tons.

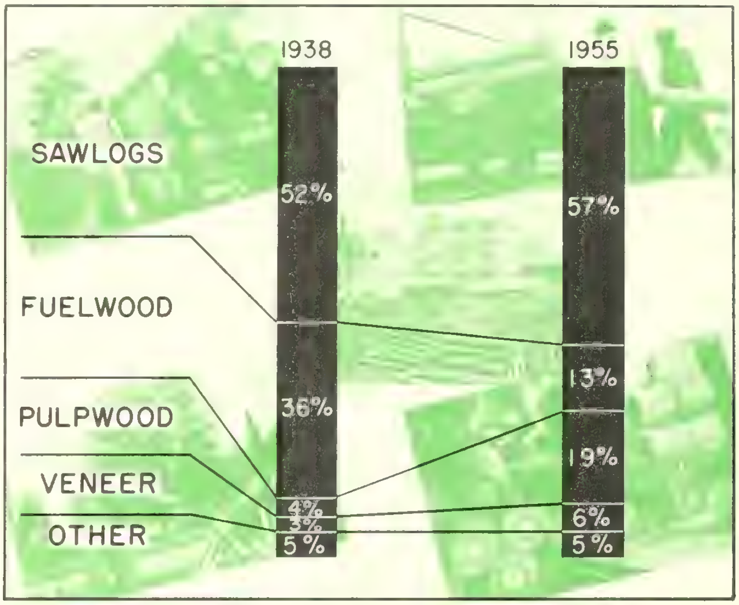

Figure 4.--Timber use by product, as a percent of total cut, 1938 and 1955.

Figure 5.--Timber cut for pulpwood is now 5 times greater than at the time of the first survey and makes up nearly 20 percent of the total cut.

While use of pulpwood has skyrocketed, the use of growing stock for fuel has dropped. As timber has become more valuable, the use of other sources for fuelwood such as sawmill and logging residue and cull and dead trees increased. In 1955, only 13 percent of the timber cut from growing stock was used for fuel, compared to 36 percent in 1938 (fig. 6).

Figure 6.--The amount of fuelwood cut from growing stock is now only a third of what it was in 1938.

Timber cut for veneer jumped 50 percent, but even with this increase, timber cut for veneer bolts still accounts for only 6 percent of the total cut.

The volume of timber cut for saw logs has remained about the same, but the proportion has increased from 52 percent in 1938 to 57 percent in 1955.

The drop in timber cut for cooperage and hewn ties just about offset the increase in the cut for poles and piling. As a result, the volume cut for all other products has not changed; they still make up only 5 percent of the total cut.

In spite of these shifts in the amount of timber cut for various products, North Carolina's forest industries still depend upon sawtimber and softwoods for about three-fourths of their timber needs.

Current growth now exceeds cut.--Because of the substantial increase in growth, along with the slight drop in the use of timber, North Carolina's timber resources are now better able to meet current timber needs than they were 17 years ago. Growth now exceeds the cut in all major species groups (table E). Also, in contrast to the drop in volume between surveys, both small and large softwood sawtimber are now increasing (table F), and all other classes of timber, which increased between surveys, are now increasing at an even faster rate.

Table E.--Average annual change in timber volume by species group and class of material

(In thousand cords)

Species group and class of material	Between surveys[1]	Current
Growing stock:	+1,878	+6,123
Yellow pine	+66	+1,703
Other softwoods	+14	+91
Soft hardwoods	+807	+2,437
Hard hardwoods	+991	+1,892
Cull timber	+641	+1,488
All live timber	+2,519	+7,611

[1] Total change between surveys divided by 17 years.

Table F.--Average annual change in timber volume by size of timber

(In thousand cords)

Size of timber	Softwoods		Hardwoods	
	Between surveys	Current	Between surveys	Current
Poletimber	+346	+1,081	+1,053	+2,764
Small sawtimber	-79	+303	+545	+704
Large sawtimber	-187	+410	+200	+861
All sizes	+80	+1,794	+1,798	+4,329

These State totals, however, hide significant details by survey units. Yellow-pine sawtimber in the Piedmont in 1955 was still being overcut. In fact, it was decreasing at an even faster rate than the average between surveys. In this unit, yellow-pine sawtimber cut exceeded the growth by 65 million board-feet per year, or about 1 percent of the inventory volume. Also, in the Mountain Unit, softwood sawtimber cut exceeded the growth by 16 percent in 1955.

THE TIMBER SUPPLY OUTLOOK

While current growth is sufficient to supply present needs, it may or may not be adequate to provide for future needs. What will be the future demands on North Carolina's timber resources, and what are the prospects of being able to satisfy these demands? In a recent study of the timber supply outlook for the Nation, the U. S. Forest Service concluded that, because of increases in population along with increases in standard of living, America's demand for wood may be from 17 to 29 percent greater by 1975, and 47 to 80 percent greater by the year 2000. The upper estimate is based upon the assumption that wood will maintain its place as a source of structural material, while the lower estimate assumes a reduction in the relative use of wood. In either case, future needs will be much greater than they are today.

North Carolina is one of the Nation's leading timber-producing states. In relation to its forest area, the State now provides more than its share of both growth and cut. With 4 percent of the Nation's commercial forest area, the State supplies 5 percent of the annual cut and produces 6 percent of the annual growth. The State's timber resources will play an even more important role in helping supply the future demand for wood.

Maintaining the State's present share of the national cut could be a minimum objective, because as the virgin timber stands of western softwoods are cut out, the eastern states, especially the southern states with their high growth capacity, will have to assume an increasing share of the cut.

Growing increased quantities of timber without regard to kind and quality will not necessarily meet the timber needs of the Nation or those of North Carolina's forest industries. Timber must be grown to produce specific products.

The lack of balance between inventory and use of timber in North Carolina raises some doubt as to whether the supply will be adequate to provide the kind of timber needed in sufficient quantities to meet future demands (fig. 7). The total volume of growing stock adds up to 222 million cords. Only about 60 percent of this volume is in trees large enough and of good enough quality to produce saw logs, but currently 80 percent of the timber cut comes from sawtimber (fig. 8). Softwood growing stock makes up 40 percent of the total volume of timber including cull timber, but supplies two-thirds of the total cut (fig. 9).

Figure 7.--The present strong demand for large yellow-pine saw logs is expected to continue.

The trend is toward a poorer balance between supply and demand. In 1938, the volume of softwood growing stock amounted to nearly half the total volume of timber; now the proportion is only 40 percent. And, if current trends continue, by 1965 the softwood proportion will have dropped still farther to 36 percent.

At the time of the first survey, sawtimber made up two-thirds of the growing-stock volume. During the past 17 years, this proportion has dropped to 61 percent, and if current trends continue can be expected to drop to 55 percent by 1965.

With so much of the inventory consisting of timber that forest industries cannot use, North Carolina faces the possibility that eventually the less desirable timber will occupy so much of the available forest land that there will not be enough space left to grow the softwoods and high-quality hardwoods needed.

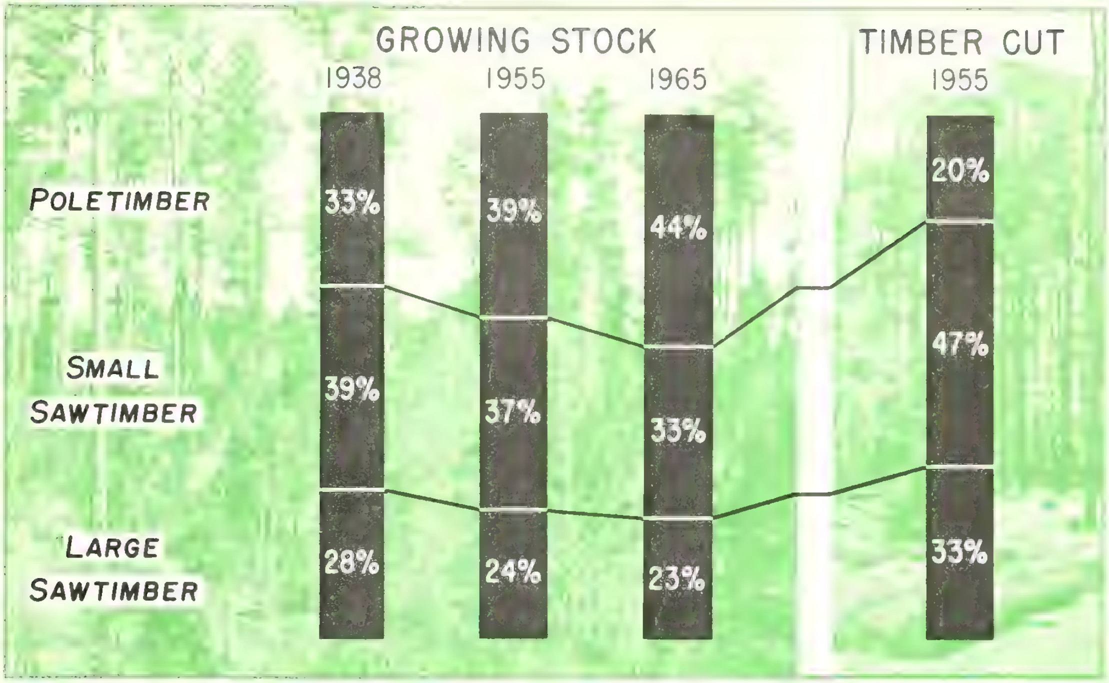

Figure 8.--Trend in proportion of growing stock volume in relation to current annual cut, by size of timber.

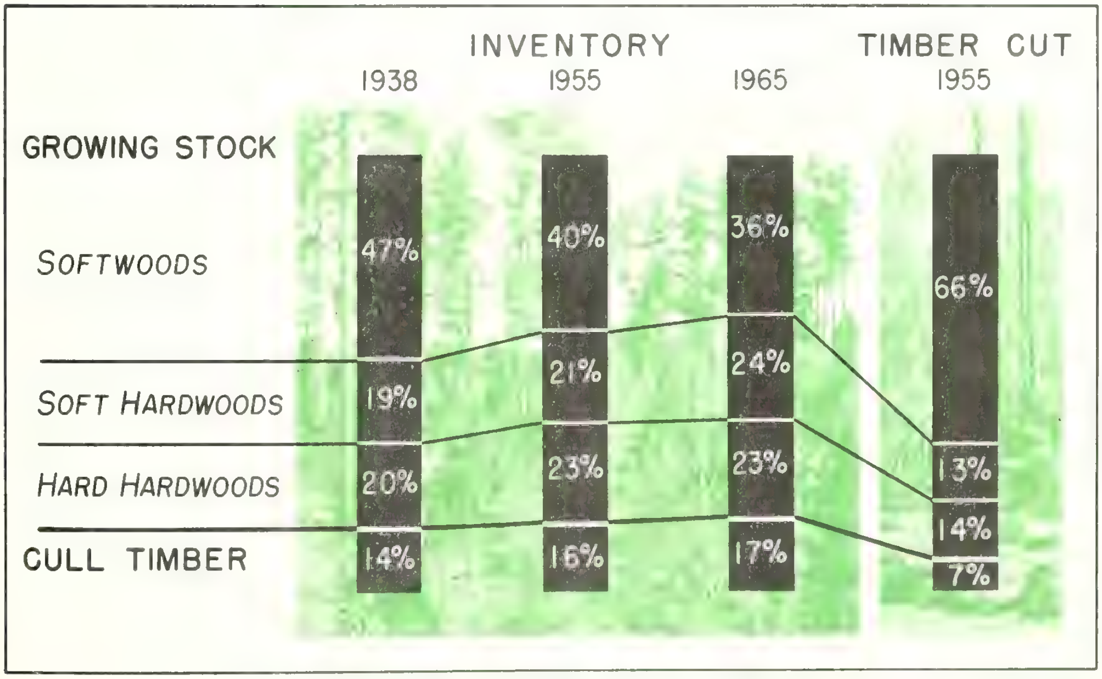

Figure 9.--Trend in proportion of timber inventory volume in relation to current annual cut, by species group and class of material.

MANY OPPORTUNITIES TO INCREASE THE TIMBER SUPPLY

North Carolina has enough forest land with the productive capacity to easily meet prospective demands. The big problem is to grow more of the right kind of trees.

Plant nonstocked areas.--One way of making sure the land is stocked with the right kind of timber is to plant it with desirable trees as quickly as possible--plant it before undesirable growth has a chance to take over (fig. 10). Out of the 3.6 million acres of forest land under 40 percent stocked, 532,000 acres do not have enough seed trees to insure prompt restocking. On 204,000 acres of this area, brush and cull trees are so dense that their removal would be necessary before the area could be planted. Planting on these areas would be very costly, and on low-quality sites, such as dry, sandy areas and swamps, probably unprofitable. This leaves 328,000 acres of forest land on which conditions are favorable for planting. This area, along with 642,000 acres in nonforest land, mainly abandoned cropland, makes a total of 970,000 acres in North Carolina which is considered plantable. During the 1956 planting season, 32,000 acres were planted.

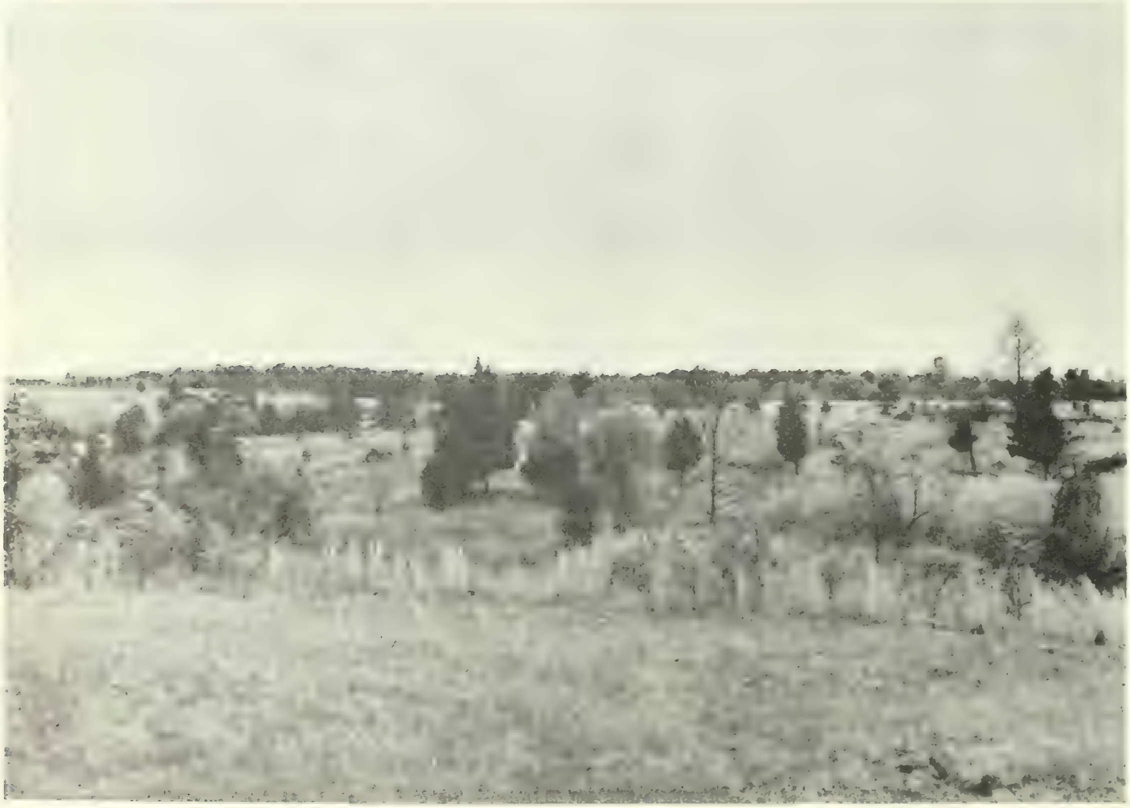

Figure 10.--North Carolina has over 600,000 acres of abandoned farmland. Unless planted, a large share of this will remain poorly stocked with poor-quality trees for many years.

Make room for desirable trees.--In addition to the job of getting the plantable land stocked, there is the even bigger job of making the space already taken over by undesirable trees and brush available to desirable trees. It is estimated that cull trees of all sizes occupy about a fifth of the available growing space in North Carolina.

The ideal way of getting rid of these undesirable trees is to find a use for them. However, the prospects of finding a use for any large part of available volume in the near future are not especially promising. Just to cut the current annual increase in sound cull timber would mean finding a use for 1.5 million cords a year. This would be in addition to the 4.3-million-cord annual surplus growth of hardwood growing stock, a large part of which is low-quality oak of little or no use at present. In view of the tremendous volume of low-grade material that would have to be used just to prevent the volume from increasing, forest landowners in North Carolina will more and more frequently be faced with making a difficult decision. They must decide whether to allow this low-grade material to take over the remaining growing space on their land or to take steps to control it.

Cut down on growth losses.--Another way of making more timber available is to cut down on losses from destructive agents, such as fire (fig. 11), disease, and insects. The annual mortality in North Carolina from all agents is 312 million board-feet, or 1.3 million cords. More than half this loss is softwoods.

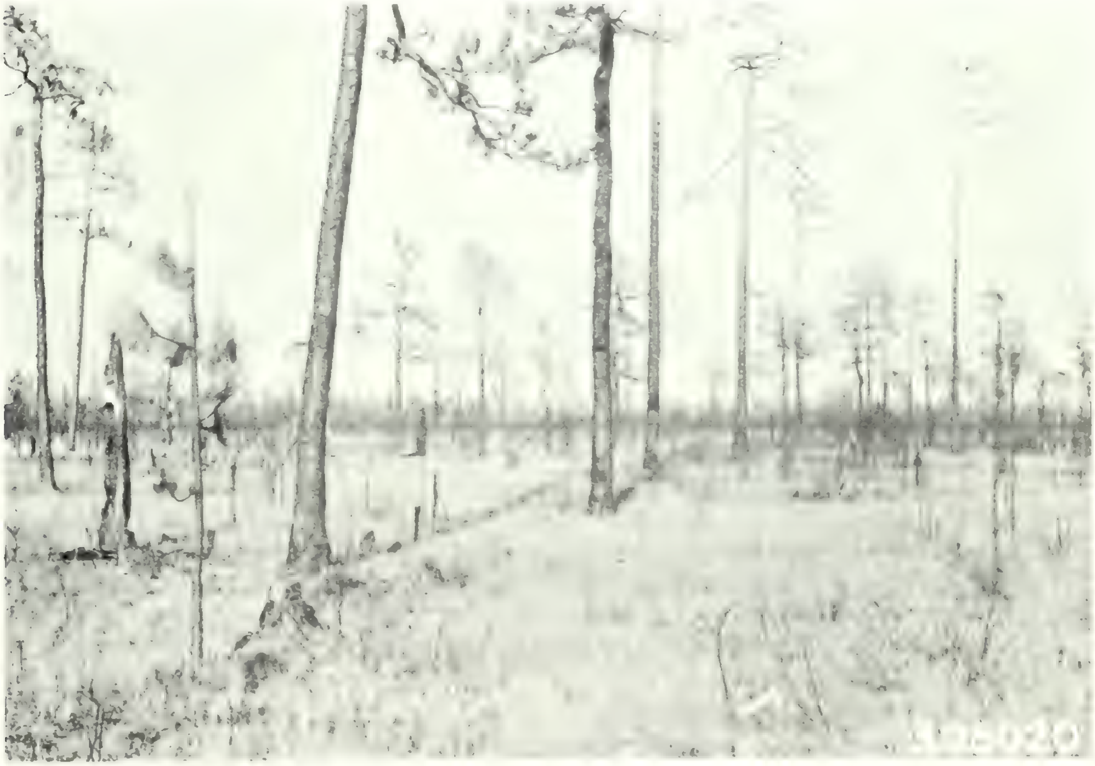

Figure 11.--Killing merchantable-size trees is only part of the damage caused by fire. An even greater loss is the destruction of countless small trees. Several hundred thousand acres of forest land burn over annually in North Carolina.

The timber of merchantable size actually killed in any one year is a relatively small part of the total loss. Other losses, or growth losses such as reduction in diameter growth, reduction of stocking, and introduction of rot, are 5 times greater than mortality. It is estimated that these growth losses may amount to as much as 6 million cords annually in North Carolina.

Make better use of timber cut.--Currently about a fourth of the timber cut either stays in the woods as logging residue or ends up in the refuse burner at the plant. More complete use of timber cut can help stretch the present supplies. It is estimated that in North Carolina 766,000 cords, or 11 percent of the total timber cut, is left in the woods following logging, most of it following saw-log and veneer-log operations (table G). While pulpwood offers the best opportunity of using this material, the prospects of utilizing any great quantity of this material even for pulpwood are not especially promising. Pulpwood operators report that most of this wood is so rough and scattered that it seldom pays to pick it up unless some of the residual standing timber is also cut. Also, pulp-mill people say it is not especially desirable for wood pulp since it contains many knots which do not chip properly, and these end up in the screenings.

Table G.--Disposition of timber cut

Disposition	Volume	
	Thousand cords	Percent
Left in woods	766	11.0
Transported to mill:	6,198	89.0
Used in manufacture	4,648	66.7
Plant residue:	1,550	22.3
Used	713	10.2
Unused:	837	12.1
Fine	485	7.0
Coarse	352	5.1
Total timber cut	6,964	100.0

The prospect of using the residue at the plant is much better--the volume is larger and it is better concentrated. It is estimated that out of the 6.2 million cords of timber brought to the primary processing plants annually, 25 percent, or 1.6 million cords, becomes mill residue (fig. 12). Nearly half this residue is used at the mill, most of it for fuel to run the mill. Much of this probably would not be burned if a higher use could be found. The equivalent of about 500,000 cords is fine material such as sawdust and shavings. The remaining 350,000 cords is coarse material suitable for pulpwood, mainly slabs and edgings, and veneer cores.

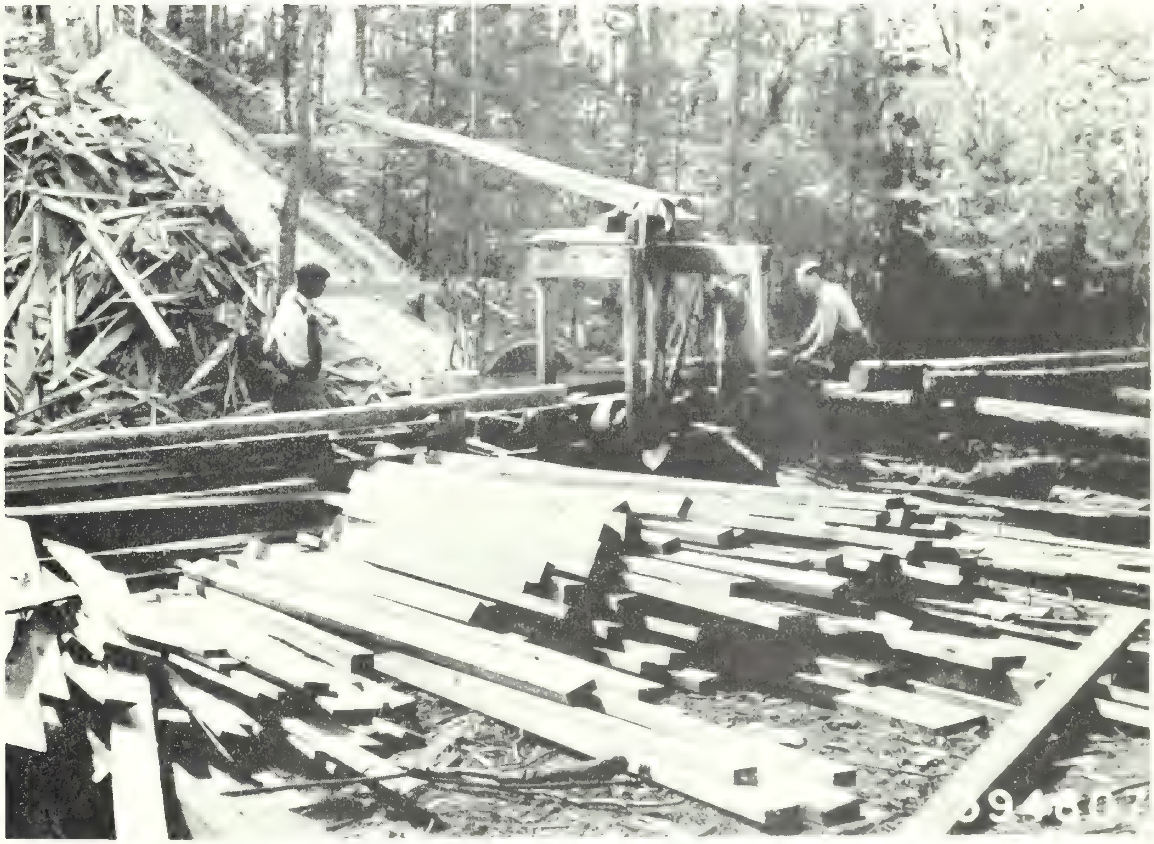

Figure 12.--Out of the 350,000 cords of unused residue suitable for pulpwood available annually, only about 10,000 cords were used in 1955.

Some progress is being made in making use of this material, but in 1955 it was estimated that the equivalent of only about 10,000 cords of pulpwood came from plant residue. Gathering this material from many widely scattered small sawmills presents the biggest obstacle to its more complete use.

ACCURACY OF FOREST SURVEY ESTIMATES

Forest Survey estimates are subject to two sources of errors. First, there are the errors that arise from human mistakes in judgment, measurement, recording, or arithmetic in the collection and compilation of the data. The amount of error from this source is not known, but every effort was made to reduce or eliminate such errors through training, supervision, field check cruises, and complete editing and machine verification in compiling the data. The second source of error arises from sampling variation. These sampling errors are measurable and were controlled by varying size and design of the sample.

The estimate of total forest area, based upon the classification of 283,240 air photo points, has a sampling error of ±0.4 percent for the State and ±1.8 percent per million acres of forest area. This means that the probabilities are two out of three that the actual forest area is within the sampling error of the estimate.

The estimate of cubic volume is based upon measurements taken on 7,361 ground plots and has a sampling error of ±1.2 percent for the State, or ±4.8 percent per billion cubic feet. The error of the volume in standard cords was not computed, but it should be approximately the same as for cubic volume. The sampling error of the total board-foot volume estimate was ±1.4 percent.

Estimates of timber growth are based on measurements of radial growth on 12,500 sample trees, and on mortality data taken on sample plots. No attempt was made to compute the sampling error of growth estimates.

Estimates of timber cut are based on the number and size of stumps tallied on cutover plots. Stumps of all trees estimated to have been cut during the 3-year period preceding the date of inventory were recorded, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard sampling error for the total volume of growing stock cut was ±4.9 percent, or ±3.6 percent per billion cubic feet.

Tables showing forest area, timber volume, and timber cut by county are included to permit grouping of the data in any desired area combination. County estimates of forest area range from a low of ±1.5 percent to a high of ±9.2 percent, estimates of growing stock volume from ±6.2 to ±16.9 percent, and of board-foot volume, from ±7.1 to ±20.8 percent. Because of these high sampling errors, comparison or use of individual county statistics should be avoided. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

Table 1.--Gross area[1] by broad use class

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	19,341.4	57.3
Noncommercial:		
Productive-reserved	340.5	1.0
Unproductive	393.8	1.2
Total forest	20,075.7	59.5
Nonforest land:		
Agriculture	9,758.8	28.9
Marsh	282.2	0.9
Urban and other[2]	1,151.2	3.4
Total nonforest	11,192.2	33.2
Total land area	31,267.9	92.7
Total water area[3]	2,467.8	7.3
All classes	33,735.7	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Includes urban, suburban, residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[3] Includes 2,313,600 acres of Census water reported in 1950 plus 17,400 acres of Census water created since 1950. Also includes 136,800 acres of water according to Survey standards but defined by the Bureau of the Census as land area.

Table 2.--Ownership of commercial forest land

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	1,046.6	5.4
Indian	52.1	0.3
Other Federal	231.5	1.2
Total Federal	1,330.2	6.9
State	253.0	1.3
County and municipal	35.6	0.2
Total public	1,618.8	8.4
Private land:		
Farm	13,268.7	68.6
Other	4,453.9	23.0
Total private	17,722.6	91.6
All classes	19,341.4	100.0

Table 3.--Commercial forest area by forest type and stand-size class

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Longleaf pine	8.2	97.5	343.4	184.1	39.1	672.3
Loblolly pine	552.1	1,355.4	1,079.7	509.4	32.9	3,529.5
Shortleaf pine	78.7	729.7	732.6	189.8	18.3	1,749.1
Pond pine	75.1	340.2	379.7	569.9	91.0	1,455.9
Virginia pine	3.7	188.4	397.6	210.7	35.3	835.7
White pine	65.4	64.4	44.9	26.8	4.3	205.8
Spruce-fir	5.1	--	5.6	--	3.5	14.2
Total	788.3	2,775.6	2,983.5	1,690.7	224.4	8,462.5
Hardwood types:						
Oak-pine	234.9	436.3	776.6	547.3	32.0	2,027.1
Oak-hickory:						
Upland hdwds.	1,118.8	1,028.1	2,129.6	782.7	149.1	5,208.3
Scrub oak	--	--	--	70.9	133.3	204.2
Oak-gum-cypress	944.1	699.1	723.2	721.6	110.7	3,198.7
Maple-beech-birch	85.7	56.9	72.4	25.6	--	240.6
Total	2,383.5	2,220.4	3,701.8	2,148.1	425.1	10,878.9
All types	3,171.8	4,996.0	6,685.3	3,838.8	649.5	19,341.4
Percent	16.4	25.8	34.6	19.8	3.4	100.0

[1] See description of forest types and stand-size classes under Definition of Terms.

Table 4.--Commercial forest area by forest type and site quality[1]

(In thousand acres)

Forest type	Poor site	Fair site	Good site	All sites
Softwood types:				
Longleaf pine	281.5	297.3	93.5	672.3
Loblolly pine	675.1	1,392.0	1,462.4	3,529.5
Shortleaf pine	496.9	598.3	653.9	1,749.1
Pond pine	873.2	398.5	184.2	1,455.9
Virginia pine	178.0	367.9	289.8	835.7
White pine	12.3	39.8	153.7	205.8
Spruce-fir	--	12.2	2.0	14.2
Total	2,517.0	3,106.0	2,839.5	8,462.5
Hardwood types:				
Oak-pine	389.3	574.2	1,063.6	2,027.1
Oak-hickory:				
Upland hdwds.	668.0	3,150.4	1,389.9	5,208.3
Scrub oak	189.5	14.7	--	204.2
Oak-gum-cypress	244.7	1,259.7	1,694.3	3,198.7
Maple-beech-birch	31.6	67.9	141.1	240.6
Total	1,523.1	5,066.9	4,288.9	10,878.9
All types	4,040.1	8,172.9	7,128.4	19,341.4
Percent	20.9	42.3	36.8	100.0

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[1] See description of forest types and site quality under Definition of Terms.

Table 5.--Net volume[1] of sawtimber by species and stand-size class

(In million board-feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	115.5	373.4	227.5	82.5	20.6	819.5
Loblolly pine	4,941.4	7,340.5	1,255.7	542.0	32.4	14,112.0
Shortleaf pine	602.8	3,463.8	540.8	86.6	5.1	4,699.1
Pond pine	397.4	1,626.8	380.5	281.3	42.7	2,728.7
Virginia pine	85.1	767.6	169.9	3.5	0.7	1,026.8
Total	6,142.2	13,572.1	2,574.4	995.9	101.5	23,386.1
White pine	414.7	271.6	55.9	22.0	4.7	768.9
Hemlock	488.9	25.6	15.9	40.0	--	570.4
Spruce & balsam fir	117.4	2.3	1.8	5.4	6.0	132.9
Cypress	801.5	375.7	116.0	31.6	3.5	1,328.3
Redcedar	6.9	24.9	25.5	--	0.3	57.6
Whitecedar	58.2	82.3	6.5	--	--	147.0
Total sftwds.	8,029.8	14,354.5	2,796.0	1,094.9	116.0	26,391.2
Hardwoods:						
Blackgum	2,466.7	1,573.4	325.9	134.3	20.1	4,520.4
Sweetgum	1,767.9	1,070.6	302.8	69.5	0.7	3,211.5
Yellow-poplar	1,389.8	857.8	320.6	52.1	3.7	2,624.0
Cottonwood	9.3	6.9	2.8	0.9	--	19.9
Soft maple	553.8	316.1	99.8	32.0	14.1	1,015.8
Basswood	156.3	29.2	37.8	--	--	223.3
Other soft hdwds.	459.5	118.5	69.8	6.4	6.2	660.4
Total	6,803.3	3,972.5	1,159.5	295.2	44.8	12,275.3
White & swamp chestnut oaks	1,259.5	945.7	350.7	60.2	6.5	2,622.6
Other white oaks	847.2	465.8	286.3	59.4	15.0	1,673.7
No. red & swamp red oaks	873.5	284.8	178.3	34.2	5.3	1,376.1
Other red oaks	1,506.1	1,072.3	462.1	86.8	6.4	3,133.7
Hickory	886.3	492.8	314.2	48.0	10.5	1,751.8
Ash	398.7	109.7	52.1	0.8	--	561.3
Beech	194.8	72.6	39.2	5.8	--	312.4
Sugar maple	30.4	16.3	17.0	--	--	63.7
Yellow birch	38.9	3.0	2.5	4.0	--	48.4
Black walnut	17.4	23.1	11.0	3.1	4.0	58.6
Other hard hdwds.	367.6	157.1	106.5	25.8	4.7	661.7
Total	6,420.4	3,643.2	1,819.9	328.1	52.4	12,264.0
Total hdwds.	13,223.7	7,615.7	2,979.4	623.3	97.2	24,539.3
All species	21,253.5	21,970.2	5,775.4	1,718.2	213.2	50,930.5
Percent	41.7	43.1	11.4	3.4	0.4	100.0

[1] Log scale, International 1/4-inch rule.

[2] See Definition of Terms for species combined with others.

Table 6.--Net volume[1] of sawtimber by species and diameter class

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Longleaf pine	458.5	287.4	66.6	7.0	819.5	1.6
Loblolly pine	5,668.6	6,578.9	1,635.0	229.5	14,112.0	27.7
Shortleaf pine	3,272.1	1,259.1	148.9	19.0	4,699.1	9.2
Pond pine	1,540.2	1,110.7	77.8	--	2,728.7	5.4
Virginia pine	716.1	296.5	14.2	--	1,026.8	2.0
Total	11,655.5	9,532.6	1,942.5	255.5	23,386.1	45.9
White pine	250.2	270.3	172.9	75.5	768.9	1.5
Hemlock	44.7	113.2	143.0	269.5	570.4	1.1
Spruce & balsam fir	25.8	61.1	24.8	21.2	132.9	0.3
Cypress	322.0	672.2	211.6	122.5	1,328.3	2.6
Redcedar	39.8	17.8	--	--	57.6	0.1
Whitecedar	79.8	51.4	15.8	--	147.0	0.3
Total sftwds.	12,417.8	10,718.6	2,510.6	744.2	26,391.2	51.8
Hardwoods:						
Blackgum	976.5	2,677.2	672.7	194.0	4,520.4	8.9
Sweetgum	674.8	1,842.5	545.1	149.1	3,211.5	6.3
Yellow-poplar	607.7	1,416.7	486.4	113.2	2,624.0	5.2
Cottonwood	3.5	9.9	6.5	--	19.9	(3/)
Soft maple	234.6	588.0	163.9	29.3	1,015.8	2.0
Basswood	40.7	130.6	46.1	5.9	223.3	0.4
Other soft hdwds.	111.7	335.9	176.5	36.3	660.4	1.3
Total	2,649.5	7,000.8	2,097.2	527.8	12,275.3	24.1
White & swamp chestnut oaks	595.6	1,307.4	487.5	232.1	2,622.6	5.1
Other white oaks	380.6	759.9	351.5	181.7	1,673.7	3.3
No. red & swamp red oaks	203.3	599.6	346.3	226.9	1,376.1	2.7
Other red oaks	653.5	1,569.5	609.8	300.9	3,133.7	6.2
Hickory	418.6	886.6	354.2	92.4	1,751.8	3.5
Ash	137.8	306.2	79.7	37.6	561.3	1.1
Beech	59.1	142.4	77.6	33.3	312.4	0.6
Sugar maple	15.7	40.6	7.4	--	63.7	0.1
Yellow birch	7.7	20.7	10.7	9.3	48.4	0.1
Black walnut	10.8	44.3	3.5	--	58.6	0.1
Other hard hdwds.	177.3	314.8	144.2	25.4	661.7	1.3
Total	2,660.0	5,992.0	2,472.4	1,139.6	12,264.0	24.1
Total hdwds.	5,309.5	12,992.8	4,569.6	1,667.4	24,539.3	48.2
All species	17,727.3	23,711.4	7,080.2	2,411.6	50,930.5	100.0
Percent	34.8	46.6	13.9	4.7	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

[3] Less than 0.05 percent.

Table 7.--Net volume[1] of sawtimber by forest type and stand-size class

(In million board-feet)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Longleaf pine	60.6	318.5	226.8	35.3	10.2	651.4
Loblolly pine	4,939.1	7,285.9	1,098.5	225.3	13.8	13,562.6
Shortleaf pine	512.5	3,475.2	411.3	41.0	1.8	4,441.8
Pond pine	380.0	1,590.4	355.9	228.8	43.1	2,598.2
Virginia pine	22.1	827.5	164.3	32.5	0.7	1,047.1
White pine	623.6	214.8	36.1	0.7	6.1	881.3
Spruce-fir	117.4	--	1.9	--	6.0	125.3
Total	6,655.3	13,712.3	2,294.8	563.6	81.7	23,307.7
Hardwood types:						
Oak-pine	1,518.3	1,628.3	698.2	297.5	3.9	4,146.2
Oak-hickory:						
Upland hdwds.	5,620.4	3,102.4	1,805.0	353.7	51.1	10,932.6
Scrub oak	--	--	--	33.9	24.8	58.7
Oak-gum-cypress	6,933.6	3,326.9	916.5	459.6	51.7	11,688.3
Maple-beech-birch	525.9	200.3	60.9	9.9	--	797.0
Total	14,598.2	8,257.9	3,480.6	1,154.6	131.5	27,622.8
All types	21,253.5	21,970.2	5,775.4	1,718.2	213.2	50,930.5
Percent	41.7	43.1	11.4	3.4	0.4	100.0

[1] Log scale, International 1/4-inch rule.

Table 8.--Net volume of sawtimber by species group, log grade, and tree-size class

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd.-ft.	Percent	Million bd.-ft.	Percent	Million bd.-ft.	Percent
PINE						
Grade 1	570.8	3.5	1,229.2	17.3	1,800.0	7.7
Grade 2	4,724.6	29.0	2,138.1	30.2	6,862.7	29.4
Grade 3	8,121.0	49.8	2,452.7	34.6	10,573.7	45.2
Grade 4	2,883.9	17.7	1,265.8	17.9	4,149.7	17.7
Total	16,300.3	100.0	7,085.8	100.0	23,386.1	100.0
OTHER SOFTWOODS						
Grade 1	22.6	1.9	244.4	13.3	267.0	8.9
Grade 2	450.5	38.6	802.0	43.7	1,252.5	41.7
Grade 3	561.2	48.1	470.9	25.6	1,032.1	34.3
Grade 4	133.1	11.4	320.4	17.4	453.5	15.1
Total	1,167.4	100.0	1,837.7	100.0	3,005.1	100.0
SOFT HARDWOODS						
Grade 1	49.6	0.9	1,632.7	24.5	1,682.3	13.7
Grade 2	952.1	17.0	1,701.2	25.5	2,653.3	21.6
Grade 3	2,593.1	46.2	1,696.7	25.5	4,289.8	35.0
Grade 4	2,017.0	35.9	1,632.9	24.5	3,649.9	29.7
Total	5,611.8	100.0	6,663.5	100.0	12,275.3	100.0
HARD HARDWOODS						
Grade 1	6.0	0.1	1,266.2	17.8	1,272.2	10.4
Grade 2	339.3	6.6	1,738.8	24.4	2,078.1	16.9
Grade 3	1,079.0	21.0	1,516.3	21.3	2,595.3	21.2
Grade 4	3,717.9	72.3	2,600.5	36.5	6,318.4	51.5
Total	5,142.2	100.0	7,121.8	100.0	12,264.0	100.0

[1] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 9.--Net volume[1] of all timber by species and stand-size class

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	294	1,258	2,040	354	88	4,034
Loblolly pine	12,222	25,228	9,594	2,092	105	49,241
Shortleaf pine	1,735	16,312	7,454	522	17	26,040
Pond pine	1,128	5,883	2,881	1,163	136	11,191
Virginia pine	336	3,563	3,206	15	8	7,128
Total	15,715	52,244	25,175	4,146	354	97,634
White pine	823	818	403	76	22	2,142
Hemlock	927	78	65	85	--	1,155
Spruce & balsam fir	255	6	35	13	15	324
Cypress	1,800	1,050	378	97	18	3,343
Redcedar	72	176	240	34	1	523
Whitecedar	158	332	251	6	--	747
Total sftwds.	19,750	54,704	26,547	4,457	410	105,868
Hardwoods:						
Blackgum	8,600	7,244	2,567	647	90	19,148
Sweetgum	5,859	5,088	2,958	452	7	14,364
Yellow-poplar	4,514	3,920	2,971	335	10	11,750
Cottonwood	44	30	8	3	--	85
Soft maple	2,487	2,426	1,742	204	62	6,921
Basswood	564	360	205	37	--	1,166
Other soft hdwds.	1,584	752	871	106	22	3,335
Total	23,652	19,820	11,322	1,784	191	56,769
White & swamp chestnut oaks	4,176	4,462	3,543	232	16	12,429
Other white oaks	2,891	2,665	2,796	238	52	8,642
No. red & swamp red oaks	2,488	1,323	1,394	115	23	5,343
Other red oaks	4,781	5,203	4,772	435	44	15,235
Hickory	2,800	2,498	1,985	212	54	7,549
Ash	1,599	752	521	12	--	2,884
Beech	798	308	396	17	--	1,519
Sugar maple	131	137	129	10	--	407
Yellow birch	102	42	16	18	--	178
Black walnut	136	64	95	8	10	313
Dogwood, holly, & persimmon	337	316	418	19	3	1,093
Other hard hdwds.	1,534	963	1,335	152	19	4,003
Total	21,773	18,733	17,400	1,468	221	59,595
Total hdwds.	45,425	38,553	28,722	3,252	412	116,364
All species	65,175	93,257	55,269	7,709	822	222,232
Percent	29.3	41.9	24.9	3.5	0.4	100.0

OTHER MATERIAL

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Sound culls:						
Softwoods	674	1,566	2,859	1,221	198	6,518
Hardwoods	8,446	7,674	9,163	2,850	978	29,111
Rotten culls	1,934	1,512	1,741	578	97	5,862
Hardwood limbs	4,609	2,000	1,275	455	82	8,421
Total other material	15,663	12,752	15,038	5,104	1,355	49,912

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[1] Sound wood and bark.

Table 10.--Net volume1/ of all timber by species and diameter class

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameter
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	758	986	814	609	708	159	4,034
Loblolly pine	4,803	7,510	8,382	9,110	15,540	3,896	49,241
Shortleaf pine	5,809	7,068	5,580	4,138	3,096	349	26,040
Pond pine	1,194	2,307	2,547	2,224	2,752	167	11,191
Virginia pine	2,037	2,153	1,324	879	706	29	7,128
Total	14,601	20,024	18,647	16,960	22,802	4,600	97,634
White pine	322	237	355	280	522	426	2,142
Hemlock	55	47	47	73	232	701	1,155
Spruce & balsam fir	23	22	21	51	128	79	324
Cypress	98	286	370	549	1,431	609	3,343
Redcedar	277	107	58	44	37	--	523
Whitecedar	177	229	104	103	103	31	747
Total sftwds.	15,553	20,952	19,602	18,060	25,255	6,446	105,868
Hardwoods:							
Blackgum	1,419	2,436	2,971	3,121	7,204	1,997	19,148
Sweetgum	1,803	1,980	2,030	2,162	4,822	1,567	14,364
Yellow-poplar	1,617	1,722	1,802	1,796	3,542	1,271	11,750
Cottonwood	8	7	13	13	28	16	85
Soft maple	1,132	1,321	1,463	864	1,674	467	6,921
Basswood	137	209	255	123	334	108	1,166
Other soft hdwds.	510	525	496	368	929	507	3,335
Total	6,626	8,200	9,030	8,447	18,533	5,933	56,769
White & swamp chestnut oaks	1,359	1,893	2,091	1,888	3,496	1,702	12,429
Other white oaks	1,000	1,722	1,346	1,265	2,089	1,220	8,642
No. red & swamp red oaks	439	717	704	627	1,582	1,274	5,343
Other red oaks	1,703	2,330	2,707	2,160	4,220	2,115	15,235
Hickory	766	1,033	1,127	1,317	2,309	997	7,549
Ash	298	601	416	471	831	267	2,884
Beech	165	248	222	210	403	271	1,519
Sugar maple	66	65	103	51	106	16	407
Yellow birch	24	18	15	25	52	44	178
Black walnut	22	47	81	33	122	8	313
Dogwood, holly, & persimmon	596	260	88	78	71	--	1,093
Other hard hdwds.	789	785	630	551	838	410	4,003
Total	7,227	9,719	9,530	8,676	16,119	8,324	59,595
Total hdwds.	13,853	17,919	18,560	17,123	34,652	14,257	116,364
All species	29,406	38,871	38,162	35,183	59,907	20,703	222,232
Percent	13.2	17.5	17.2	15.8	27.0	9.3	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	1,471	1,572	1,273	845	954	403	6,518
Hardwoods	5,451	4,986	4,371	3,123	6,403	4,777	29,111
Rotten culls	392	574	533	466	1,442	2,455	5,862
Hardwood limbs	--	--	--	968	4,046	3,407	8,421
Total other material	7,314	7,132	6,177	5,402	12,845	11,042	49,912

1/ Sound wood and bark.

Table 11.--Net volume[1] of all timber by species and class of material

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Longleaf pine	1,873	417	1,744	4,034	94	20
Loblolly pine	29,163	7,765	12,313	49,241	984	31
Shortleaf pine	10,919	2,244	12,877	26,040	1,363	14
Pond pine	6,008	1,682	3,501	11,191	955	56
Virginia pine	2,301	637	4,190	7,128	2,326	14
Total	50,264	12,745	34,625	97,634	5,722	135
White pine	1,338	245	559	2,142	235	20
Hemlock	876	177	102	1,155	213	1
Spruce & balsam fir	212	67	45	324	39	4
Cypress	2,322	637	384	3,343	191	177
Redcedar	120	19	384	523	72	2
Whitecedar	303	38	406	747	46	7
Total sftwds.	55,435	13,928	36,505	105,868	6,518	346
Hardwoods:						
Blackgum	9,630	2,692	6,826	19,148	5,852	1,596
Sweetgum	6,641	1,910	5,813	14,364	2,644	320
Yellow-poplar	5,193	1,416	5,141	11,750	954	185
Cottonwood	41	16	28	85	8	1
Soft maple	2,165	840	3,916	6,921	4,719	1,012
Basswood	447	118	601	1,166	235	56
Other soft hdwds.	1,334	470	1,531	3,335	1,576	228
Total	25,451	7,462	23,856	56,769	15,988	3,398
White & swamp chestnut oaks	5,268	1,818	5,343	12,429	2,569	348
Other white oaks	3,410	1,164	4,068	8,642	3,889	532
No. red & swamp red oaks	2,725	758	1,860	5,343	1,487	194
Other red oaks	6,438	2,057	6,740	15,235	4,070	764
Hickory	3,538	1,085	2,926	7,549	1,267	235
Ash	1,193	376	1,315	2,884	841	104
Beech	653	231	635	1,519	858	162
Sugar maple	130	43	234	407	274	38
Yellow birch	95	26	57	178	123	52
Black walnut	122	41	150	313	118	4
Dogwood, holly, & persimmon	98	51	944	1,093	655	103
Scrub oak[3]	--	--	--	--	2,219	77
Other hard hdwds.	1,328	471	2,204	4,003	2,293	386
Total	24,998	8,121	26,476	59,595	20,663	2,999
Total hdwds.	50,449	15,583	50,332	116,364	36,651	6,397
All species	105,884	29,511	86,837	222,232	43,169	6,743
Percent	47.6	13.3	39.1	100.0	86.5	13.5

[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 12.--Net volume[1] of all timber by forest type and stand-size class

(In thousand cords)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
GROWING STOCK						
Softwood types:						
Longleaf pine	168	1,099	2,059	199	49	3,574
Loblolly pine	13,383	26,861	9,749	1,074	54	51,121
Shortleaf pine	1,644	17,140	6,254	218	6	25,262
Pond pine	1,087	5,761	2,770	935	147	10,700
Virginia pine	68	3,927	3,399	220	16	7,630
White pine	1,317	795	417	7	18	2,554
Spruce-fir	257	--	34	--	15	306
Total	17,924	55,583	24,682	2,653	305	101,147
Hardwood types:						
Oak-pine	4,627	7,085	5,798	1,360	11	18,881
Oak-hickory:						
Upland hdwds.	18,871	15,316	16,910	1,513	199	52,809
Scrub oak	--	--	--	124	100	224
Oak-gum-cypress	22,253	14,362	7,191	2,034	207	46,047
Maple-beech-birch	1,500	911	688	25	--	3,124
Total	47,251	37,674	30,587	5,056	517	121,085
All types	65,175	93,257	55,269	7,709	822	222,232
Percent	29.3	41.9	24.9	3.5	0.4	100.0
OTHER MATERIAL						
Softwood types:						
Longleaf pine	28	27	103	61	17	236
Loblolly pine	1,112	1,785	1,026	217	5	4,145
Shortleaf pine	173	1,027	1,136	285	12	2,633
Pond pine	104	301	266	347	83	1,101
Virginia pine	15	535	1,334	384	74	2,342
White pine	378	137	139	53	--	707
Spruce-fir	10	--	34	--	15	59
Total	1,820	3,812	4,038	1,347	206	11,223
Hardwood types:						
Oak-pine	955	1,342	1,596	667	49	4,609
Oak-hickory:						
Upland hdwds.	5,169	3,472	6,038	1,608	712	16,999
Scrub oak	--	--	--	92	82	174
Oak-gum-cypress	7,140	3,950	3,137	1,358	306	15,891
Maple-beech-birch	579	176	229	32	--	1,016
Total	13,843	8,940	11,000	3,757	1,149	38,689
All types	15,663	12,752	15,038	5,104	1,355	49,912
Percent	31.4	25.6	30.1	10.2	2.7	100.0

[1] Sound wood and bark.

Table 13.--Net volume[1] of all timber by species and diameter class

(In million cubic feet)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	44.2	67.0	59.3	46.2	56.1	13.7	286.5
Loblolly pine	279.9	503.3	605.5	672.7	1,251.1	331.3	3,643.8
Shortleaf pine	332.8	476.2	421.7	311.2	244.8	29.6	1,816.3
Pond pine	71.3	155.1	172.3	172.3	218.0	14.2	803.2
Virginia pine	119.8	144.0	97.3	65.9	56.9	2.5	486.4
Total	848.0	1,345.6	1,356.1	1,268.3	1,826.9	391.3	7,036.2
White pine	21.4	17.8	27.6	23.9	45.9	40.3	176.9
Hemlock	3.6	3.5	3.8	6.1	20.8	67.6	105.4
Spruce & balsam fir	1.4	1.7	1.6	4.0	11.4	7.6	27.7
Cypress	6.7	21.2	28.6	45.6	128.4	58.2	288.7
Redcedar	17.7	8.1	4.9	3.8	3.4	--	37.9
Whitecedar	12.1	17.0	9.1	9.1	9.8	2.8	59.9
Total sftwds.	910.9	1,414.9	1,431.7	1,360.8	2,046.6	567.8	7,732.7
Hardwoods:							
Blackgum	81.5	160.4	213.8	238.9	564.9	165.9	1,425.4
Sweetgum	101.3	129.9	146.3	163.2	380.9	129.7	1,051.3
Yellow-poplar	93.6	113.8	136.7	135.2	281.3	104.4	865.0
Cottonwood	0.4	0.5	0.9	0.9	2.3	1.3	6.3
Soft maple	65.4	86.6	105.5	67.0	133.6	38.6	496.7
Basswood	7.8	13.7	18.3	9.2	26.4	9.0	84.4
Other soft hdwds.	29.1	34.1	35.7	28.6	74.6	42.1	244.2
Total	379.1	539.0	657.2	643.0	1,464.0	491.0	4,173.3
White & swamp chestnut oaks	76.6	124.3	149.5	142.2	277.1	139.9	909.6
Other white oaks	55.6	111.9	96.8	94.0	165.4	100.1	623.8
No. red & swamp red oaks	24.4	46.3	50.0	48.6	125.6	105.6	400.5
Other red oaks	94.8	153.4	193.8	161.4	336.2	174.5	1,114.1
Hickory	44.0	67.5	80.7	99.7	184.3	81.6	557.8
Ash	17.2	39.5	30.2	35.5	66.3	22.0	210.7
Beech	9.7	16.0	16.1	16.2	31.9	22.3	112.2
Sugar maple	3.7	4.1	7.4	3.7	8.5	1.4	28.8
Yellow birch	1.5	1.0	1.0	1.7	4.2	3.6	13.0
Black walnut	1.2	3.1	5.8	2.6	9.3	0.7	22.7
Dogwood, holly, & persimmon	34.1	17.1	6.3	6.1	5.6	--	69.2
Other hard hdwds.	46.1	50.3	45.2	41.5	66.8	33.9	283.8
Total	408.9	634.5	682.8	653.2	1,281.2	685.6	4,346.2
Total hdwds.	788.0	1,173.5	1,340.0	1,296.2	2,745.2	1,176.6	8,519.5
All species	1,698.9	2,588.4	2,771.7	2,657.0	4,791.8	1,744.4	16,252.2
Percent	10.5	15.9	17.1	16.3	29.5	10.7	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls:							
Softwoods	86.9	106.7	96.1	65.6	77.9	36.7	469.9
Hardwoods	310.4	329.9	314.1	233.1	506.4	396.1	2,090.0
Rotten culls	24.5	38.4	37.8	30.2	113.2	206.3	450.4
Hardwood limbs	--	--	--	66.4	309.3	282.1	657.8
Total other material	421.8	475.0	448.0	395.3	1,006.8	921.2	3,668.1

[1] Excluding bark.

Table 14.--Net volume[1] of all timber by species and class of material

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Longleaf pine	143.8	31.5	111.2	286.5	7.2	1.6
Loblolly pine	2,323.1	537.5	783.2	3,643.8	71.3	2.4
Shortleaf pine	826.8	180.5	809.0	1,816.3	97.5	1.1
Pond pine	462.0	114.8	226.4	803.2	65.9	3.9
Virginia pine	176.0	46.6	263.8	486.4	160.0	0.9
Total	3,931.7	910.9	2,193.6	7,036.2	401.9	9.9
White pine	122.0	15.7	39.2	176.9	19.9	1.9
Hemlock	80.7	17.6	7.1	105.4	19.3	0.1
Spruce & balsam fir	20.1	4.5	3.1	27.7	3.4	0.3
Cypress	209.6	51.2	27.9	288.7	16.5	17.3
Redcedar	10.2	1.9	25.8	37.9	5.5	0.1
Whitecedar	24.7	6.1	29.1	59.9	3.4	0.7
Total sftwds.	4,399.0	1,007.9	2,325.8	7,732.7	469.9	30.3
Hardwoods:						
Blackgum	757.1	212.6	455.7	1,425.4	434.4	123.8
Sweetgum	531.2	142.6	377.5	1,051.3	188.4	25.7
Yellow-poplar	416.9	104.0	344.1	865.0	71.4	14.0
Cottonwood	3.3	1.2	1.8	6.3	0.5	0.1
Soft maple	173.5	65.7	257.5	496.7	334.0	75.5
Basswood	36.1	8.5	39.8	84.4	17.6	4.8
Other soft hdwds.	107.6	37.7	98.9	244.2	111.7	17.4
Total	2,025.7	572.3	1,575.3	4,173.3	1,158.0	261.3
White & swamp chestnut oaks	421.4	137.8	350.4	909.6	191.6	28.4
Other white oaks	272.0	87.5	264.3	623.8	293.3	42.5
No. red & swamp red oaks	218.2	61.6	120.7	400.5	115.1	15.8
Other red oaks	510.1	162.0	442.0	1,114.1	307.3	60.9
Hickory	281.7	83.9	192.2	557.8	96.5	19.0
Ash	93.7	30.1	86.9	210.7	60.5	8.0
Beech	52.3	18.1	41.8	112.2	62.7	13.0
Sugar maple	10.4	3.2	15.2	28.8	20.4	3.1
Yellow birch	7.6	1.9	3.5	13.0	9.4	4.3
Black walnut	9.7	2.9	10.1	22.7	9.4	0.3
Dogwood, holly, & persimmon	8.2	3.5	57.5	69.2	41.2	6.5
Scrub oak[3]	--	--	--	--	145.9	5.5
Other hard hdwds.	106.0	36.2	141.6	283.8	159.0	29.0
Total	1,991.3	628.7	1,726.2	4,346.2	1,512.3	236.3
Total hdwds.	4,017.0	1,201.0	3,301.5	8,519.5	2,670.3	497.6
All species	8,416.0	2,208.9	5,627.3	16,252.2	3,140.2	527.9
Percent	51.8	13.6	34.6	100.0	85.6	14.4

[1] Excluding bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 15.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	6,678	3,244	651	204	952
Hardwood	734	19	10	--	17
Loblolly pine					
Softwood	7,928	4,987	914	402	3,497
Hardwood	1,017	388	104	39	346
Shortleaf pine					
Softwood	5,090	4,249	488	193	2,229
Hardwood	1,420	513	73	13	310
Pond pine					
Softwood	5,044	4,642	937	399	1,770
Hardwood	19	34	--	12	14
Virginia pine					
Softwood	4,790	3,977	348	78	1,106
Hardwood	1,280	415	65	57	147
White pine					
Softwood	8,293	2,697	702	173	3,658
Hardwood	1,240	640	103	45	623
Oak-pine					
Softwood	2,776	1,705	461	350	965
Hardwood	3,687	2,028	438	170	1,080
Upland hdwds.					
Softwood	190	199	61	147	132
Hardwood	4,833	2,818	786	287	1,967
Scrub oak					
Softwood	--	--	--	207	207
Hardwood	--	--	--	80	80
Oak-gum-cypress					
Softwood	1,088	904	284	270	653
Hardwood	6,257	3,855	983	344	3,001
Maple-beech-birch					
Softwood	2,904	1,671	88	231	1,480
Hardwood	3,231	1,852	754	155	1,832
All types					
Softwood	2,532	2,873	418	270	1,365
Hardwood	4,169	1,524	446	161	1,269

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[1] Log scale, International 1/4-inch rule.

Table 16.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[3]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	16.5	1.2	11.2	0.1	5.9	0.1	1.1	0.1	5.2	0.1
Hardwood	4.0	2.2	0.1	0.2	(4/)	0.2	(4/)	0.3	0.1	0.2
Loblolly pine										
Softwood	19.6	0.3	17.2	0.3	7.8	0.3	1.8	0.1	12.3	0.3
Hardwood	4.6	1.7	2.6	1.0	1.2	0.6	0.3	0.3	2.1	0.9
Shortleaf pine										
Softwood	13.6	0.3	20.1	0.5	7.3	0.9	0.9	0.9	12.2	0.7
Hardwood	7.3	1.9	3.3	0.9	1.3	0.7	0.2	0.6	2.3	0.8
Pond pine										
Softwood	13.6	1.0	16.7	0.7	7.3	0.7	1.6	0.6	7.2	0.7
Hardwood	0.9	0.3	0.2	0.1	--	(4/)	0.1	0.1	0.1	0.1
Virginia pine										
Softwood	10.4	--	18.5	1.8	7.2	3.0	0.4	1.5	7.8	2.3
Hardwood	8.2	4.1	2.3	1.0	1.3	0.3	0.5	0.4	1.3	0.5
White pine										
Softwood	15.6	2.9	7.7	0.5	6.2	0.3	0.7	1.7	8.8	1.4
Hardwood	4.6	2.9	4.6	1.7	3.1	2.8	0.1	--	3.6	2.0
Oak-pine										
Softwood	7.2	0.2	6.1	0.2	3.3	0.2	1.4	0.3	3.8	0.2
Hardwood	12.5	3.9	10.2	2.9	4.2	1.9	0.9	0.9	5.5	2.1
Upland hdwds.										
Softwood	0.7	(4/)	0.9	(4/)	0.6	0.1	0.6	0.1	0.6	0.1
Hardwood	16.2	4.6	14.0	3.3	7.4	2.7	1.3	2.3	9.5	3.2
Scrub oak										
Softwood	--	--	--	--	--	--	0.7	0.1	0.7	0.1
Hardwood	--	--	--	--	--	--	0.4	0.8	0.4	0.8
Oak-gum-cypress										
Softwood	2.5	0.2	2.9	0.2	1.3	0.1	0.9	0.1	1.9	0.1
Hardwood	21.0	7.3	17.7	5.5	8.7	4.2	1.7	1.9	12.5	4.8
Maple-beech-birch										
Softwood	6.0	0.8	6.1	0.2	1.5	--	0.6	0.5	4.1	0.4
Hardwood	11.5	6.0	9.9	2.8	8.0	3.2	0.4	0.7	8.9	3.8
All types										
Softwood	6.2	0.3	10.9	0.3	4.0	0.4	1.1	0.3	5.5	0.4
Hardwood	14.3	4.7	7.7	2.2	4.3	1.8	0.8	1.1	6.0	2.2

[1] Sound wood and bark.

[2] Sound trees.

[3] Cull trees.

[4] Less than 0.05 cord per acre.

Table 17.--Number of trees[1] by species group, quality class, and tree size

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	1,779,490	590,887	225,554	25,709	2,621,640
Sound culls	(2/)	63,443	16,379	1,300	81,122
Rotten culls	(2/)	466	655	326	1,447
Total	1,779,490	654,796	242,588	27,335	2,704,209
Other softwoods:					
Sound trees	205,644	39,356	14,731	4,704	264,435
Sound culls	(2/)	4,702	2,058	561	7,321
Rotten culls	(2/)	211	261	455	927
Total	205,644	44,269	17,050	5,720	272,683
Soft hardwoods:					
Sound trees	1,764,266	324,158	63,605	27,129	2,179,158
Sound culls	(2/)	112,352	13,472	7,581	133,405
Rotten culls	(2/)	22,435	6,434	8,403	37,272
Total	1,764,266	458,945	83,511	43,113	2,349,835
Hard hardwoods:					
Sound trees	1,884,740	391,719	67,997	30,288	2,374,744
Sound culls	(2/)	187,436	16,916	9,404	213,756
Rotten culls	(2/)	24,230	5,451	6,421	36,102
Total	1,884,740	603,385	90,364	46,113	2,624,602
All species	5,634,140	1,761,395	433,513	122,281	7,951,329

1/ All trees 1.0 inch d.b.h. and larger.

2/ Data not collected.

Table 18.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class

(In thousand acres)

Forest type	No planting required	Suitable for machine planting	Hand planting required	All classes
Longleaf pine	184.9	19.1	19.2	223.2
Loblolly pine	514.4	13.7	14.2	542.3
Shortleaf pine	195.0	--	13.1	208.1
Pond pine	572.6	10.9	14.1	597.6
Virginia pine	221.3	2.7	13.7	237.7
White pine	31.1	--	--	31.1
Spruce-fir	--	--	3.5	3.5
Oak-pine	539.8	11.2	8.1	559.1
Oak-hickory:				
Upland hdwds.	782.9	13.9	73.3	870.1
Scrub oak	68.0	35.2	56.6	159.8
Maple-beech-birch	14.3	--	5.3	19.6
All types	3,124.3	106.7	221.1	3,452.1
Percent	90.5	3.1	6.4	100.0

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[1] Excludes 203,900 acres on which planting would be impractical because of existing dense cover of brush.

Table 19.--Stocking on commercial forest area by forest type and tree-size class

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Longleaf pine	25.7	233.8	183.7	229.1	672.3
Loblolly pine	21.1	294.9	517.4	2,696.1	3,529.5
Shortleaf pine	18.2	140.5	303.2	1,287.2	1,749.1
Pond pine	83.8	328.1	273.7	770.3	1,455.9
Virginia pine	41.5	143.1	214.0	437.1	835.7
White pine	4.3	34.0	62.7	104.8	205.8
Spruce-fir	3.5	3.1	--	7.6	14.2
Oak-pine	31.2	245.3	494.9	1,255.7	2,027.1
Oak-hickory:					
Upland hdwds.	143.2	929.2	1,768.6	2,367.3	5,208.3
Scrub oak	122.0	65.4	4.7	12.1	204.2
Oak-gum-cypress	98.6	522.2	710.0	1,867.9	3,198.7
Maple-beech-birch	6.0	37.4	83.1	114.1	240.6
All types	599.1	2,977.0	4,616.0	11,149.3	19,341.4
Percent	3.1	15.4	23.9	57.6	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Longleaf pine	418.5	216.1	30.4	7.3	672.3
Loblolly pine	1,035.9	1,406.9	665.8	420.9	3,529.5
Shortleaf pine	677.3	606.9	296.7	168.2	1,749.1
Pond pine	789.4	464.1	131.5	70.9	1,455.9
Virginia pine	550.3	187.8	58.2	39.4	835.7
White pine	57.0	89.9	42.9	16.0	205.8
Spruce-fir	6.7	2.4	--	5.1	14.2
Oak-pine	908.7	858.2	201.3	58.9	2,027.1
Oak-hickory:					
Upland hdwds.	2,062.2	2,448.9	623.3	73.9	5,208.3
Scrub oak	192.9	11.3	--	--	204.2
Oak-gum-cypress	1,049.5	1,266.4	573.7	309.1	3,198.7
Maple-beech-birch	62.4	120.9	44.1	13.2	240.6
All types	7,810.8	7,679.8	2,667.9	1,182.9	19,341.4
Percent	40.4	39.7	13.8	6.1	100.0

Table 20.--Net annual growth by species group and unit of measure, 1955

Species group	Sawtimber	Growing stock	
	Million bd.-ft.	Million cu. ft.	Thousand cords
So. yellow pines	1,682.5	421.1	6,366
Other softwoods	104.4	26.9	367
Soft hardwoods	624.2	228.4	3,421
Hard hardwoods	567.1	194.8	2,933
All species	2,978.2	871.2	13,087

Table 21.--Net annual growth percentages for each species group and unit of measure, 1955

Unit of measure	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	7.19	3.47	5.09	4.62	5.85
Cubic feet	5.98	3.86	5.47	4.48	5.36
Standard cords	6.52	4.46	6.03	4.92	5.89

Table 22.--Average growth[1] per acre by forest type and stand-size class

SAWTIMBER (In board-feet)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf pine	303	96	19	103
Loblolly pine	422	173	41	287
Shortleaf pine	321	84	14	185
Pond pine	310	139	34	140
Virginia pine	238	45	6	78
White pine	321	82	22	224
Oak-pine	267	101	49	141
Oak-hickory:				
Upland hdwds.	211	72	24	121
Scrub oak	--	--	24	24
Oak-gum-cypress	283	100	49	181
Maple-beech-birch	248	67	20	170
All types	300	100	34	169

GROWING STOCK (In standard cords)

Forest type	Sawtimber	Poletimber	Other stands	All stands
Longleaf pine	0.7	0.5	0.1	0.4
Loblolly pine	1.2	1.1	0.2	1.0
Shortleaf pine	1.1	0.9	0.1	0.9
Pond pine	0.9	0.7	0.1	0.5
Virginia pine	0.9	0.7	0.1	0.6
White pine	0.9	1.2	0.1	0.8
Oak-pine	0.9	0.6	0.2	0.6
Oak-hickory:				
Upland hdwds.	0.8	0.6	0.1	0.6
Scrub oak	--	--	0.1	0.1
Oak-gum-cypress	1.0	0.9	0.2	0.8
Maple-beech-birch	0.8	0.6	(2/)	0.6
All types	1.0	0.7	0.2	0.7

GROWING STOCK (In cubic feet)

Forest type	Sawtimber	Poletimber	Other stands	All stands
Longleaf pine	49.3	33.4	9.6	28.0
Loblolly pine	92.0	74.9	16.8	75.2
Shortleaf pine	82.4	55.7	7.2	62.3
Pond pine	63.1	44.9	10.6	34.5
Virginia pine	60.9	45.1	5.4	37.0
White pine	70.8	88.0	5.1	64.6
Oak-pine	68.7	37.8	14.9	41.5
Oak-hickory:				
Upland hdwds.	56.4	38.5	9.7	40.7
Scrub oak	--	--	5.8	5.8
Oak-gum-cypress	78.4	59.7	14.9	57.7
Maple-beech-birch	59.9	40.8	3.1	48.1
All types	73.4	49.3	11.7	50.8

[1] Total growth on undisturbed stands without deduction for normal mortality.

[2] Less than 0.05 cord per acre.

Table 23.--Average annual volume of timber cut by tree-size class and species group, 1955

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
SAWTIMBER (In million board-feet)					
Small sawtimber	932.0	36.5	66.5	108.3	1,143.3
Large sawtimber	480.7	85.8	237.5	198.6	1,002.6
All trees	1,412.7	122.3	304.0	306.9	2,145.9
GROWING STOCK (In thousand cords)					
Pole trees	932	32	233	238	1,435
Small sawtimber	2,651	89	196	323	3,259
Large sawtimber	1,080	155	555	480	2,270
All trees	4,663	276	984	1,041	6,964
GROWING STOCK (In million cubic feet)					
Pole trees	59.3	2.3	15.3	15.8	92.7
Small sawtimber	197.8	7.6	15.1	24.8	245.3
Large sawtimber	89.1	14.5	45.4	39.1	188.1
All trees	346.2	24.4	75.8	79.7	526.1

Table 24.--Net annual change in volume by species group, 1955

SAWTIMBER (In million board-feet)

Item	Southern yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, beginning of year	23,386.1	3,005.1	12,275.3	12,264.0	50,930.5
Total growth	1,813.4	135.7	686.6	654.8	3,290.5
Mortality	130.9	31.3	62.4	87.7	312.3
Net growth	1,682.5	104.4	624.2	567.1	2,978.2
Timber cut	1,412.7	122.3	304.0	306.9	2,145.9
Loss or gain	+269.8	-17.9	+320.2	+260.2	+832.3
Net volume, end of year	23,655.9	2,987.2	12,595.5	12,524.2	51,762.8
Percent change	+1.2	-0.6	+2.6	+2.1	+1.6
GROWING STOCK (In thousand cords)					
Net volume, beginning of year	97,634	8,234	56,769	59,595	222,232
Total growth	6,969	449	3,717	3,265	14,400
Mortality	603	82	296	332	1,313
Net growth	6,366	367	3,421	2,933	13,087
Timber cut	4,663	276	984	1,041	6,964
Loss or gain	+1,703	+91	+2,437	+1,892	+6,123
Net volume, end of year	99,337	8,325	59,206	61,487	228,355
Percent change	+1.7	+1.1	+4.3	+3.2	+2.8
GROWING STOCK (In million cubic feet)					
Net volume, beginning of year	7,036.2	696.5	4,173.3	4,346.2	16,252.2
Total growth	464.1	34.0	250.3	219.3	967.7
Mortality	43.0	7.1	21.9	24.5	96.5
Net growth	421.1	26.9	228.4	194.8	871.2
Timber cut	346.2	24.4	75.8	79.7	526.1
Loss or gain	+74.9	+2.5	+152.6	+115.1	+345.1
Net volume, end of year	7,111.1	699.0	4,325.9	4,461.3	16,597.3
Percent change	+1.1	+0.4	+3.7	+2.6	+2.1

Table 25.--County area by broad use class

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alamance	277.8	143.9	1.8	--	132.1	47.9
Alexander	165.7	74.9	3.4	--	87.4	53.9
Alleghany	147.2	81.7	0.5	4.0	61.0	41.6
Anson	343.0	133.3	3.2	(2/)	206.5	60.8
Ashe	273.3	132.1	--	1.3	139.9	51.2
Avery	158.1	40.4	--	1.2	116.5	73.7
Beaufort	612.5	187.6	84.5	--	340.4	64.5
Bertie	461.4	132.1	20.6	--	308.7	70.0
Bladen	570.3	138.3	10.5	4.7	416.8	74.5
Brunswick	580.5	93.2	27.4	29.6	430.3	77.8
Buncombe	414.1	107.6	1.5	26.6	278.4	67.5
Burke	330.9	75.8	7.8	0.2	247.1	76.5
Cabarrus	230.4	141.2	0.2	--	89.0	38.7
Caldwell	307.2	65.7	3.3	(2/)	238.2	78.4
Camden	197.1	47.0	45.0	--	105.1	69.1
Carteret	680.3	104.5	342.5	31.1	202.2	59.9
Caswell	278.4	107.0	0.7	--	170.7	61.5
Catawba	263.7	158.9	5.4	--	99.4	38.5
Chatham	452.5	96.8	1.2	--	354.5	78.6
Cherokee	298.9	32.4	10.8	1.9	253.8	88.1
Chowan	149.8	48.5	35.1	--	66.2	57.7
Clay	140.1	16.3	3.8	2.5	117.5	86.2
Cleveland	298.2	182.8	0.9	(2/)	114.5	38.5
Columbus	610.6	167.8	10.2	2.3	430.3	71.7
Craven	502.4	107.9	40.8	23.9	329.8	71.4
Cumberland	423.7	157.8	1.9	2.3	261.7	62.0
Currituck	300.2	72.9	128.1	1.1	98.1	57.0
Dare	797.4	50.1	550.5	38.6	158.2	64.1
Davidson	358.4	177.3	10.5	--	170.6	49.0
Davie	169.0	92.1	0.9	--	76.0	45.2
Duplin	526.7	194.1	0.6	2.5	329.5	62.6
Durham	192.0	73.5	0.8	--	117.7	61.6
Edgecombe	327.0	159.9	0.6	--	166.5	51.0
Forsyth	271.4	135.1	1.2	1.3	133.8	49.5
Franklin	316.1	127.9	0.7	--	187.5	59.4
Gaston	232.3	121.0	6.8	--	104.5	46.3
Gates	223.4	60.0	4.6	--	158.8	72.6
Graham	191.4	14.1	9.3	4.1	163.9	90.0
Granville	347.5	127.7	1.6	--	218.2	63.1
Greene	172.2	89.2	0.2	--	82.8	48.1
Guilford	417.3	237.2	3.0	0.1	177.0	42.7
Halifax	463.4	184.9	5.2	--	273.3	59.6
Harnett	388.5	164.4	2.2	--	221.9	57.4
Haywood	348.2	89.7	1.1	60.4	197.0	56.8
Henderson	244.4	67.9	0.4	(2/)	176.1	72.2
Hertford	231.0	74.0	4.4	--	152.6	67.3
Hoke	265.6	102.1	0.9	2.2	160.4	60.6
Hyde	873.0	103.9	470.6	109.8	188.7	46.9
Iredell	380.2	199.5	2.8	--	177.9	47.1
Jackson	319.3	40.7	3.5	4.5	270.6	85.7
Johnston	508.8	252.3	2.5	2.5	251.5	49.7
Jones	299.5	63.8	1.3	12.0	222.4	74.6

Table 25.--County area by broad use class (continued)

County	Total area1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Lee	163.8	41.3	0.8	--	121.7	74.7
Lenoir	250.2	121.5	2.0	--	126.7	51.0
Lincoln	197.8	108.6	1.1	--	88.1	44.8
McDowell	286.1	50.8	4.7	6.8	223.8	79.5
Macon	332.8	55.5	5.9	6.4	265.0	81.1
Madison	291.8	88.8	1.1	1.5	200.4	68.9
Martin	308.5	102.2	1.6	--	204.7	66.7
Mecklenburg	351.4	181.6	6.7	0.7	162.4	47.1
Mitchell	140.8	32.9	--	5.0	102.9	73.1
Montgomery	319.4	59.9	8.1	(2/)	251.4	80.8
Moore	430.7	105.5	1.5	--	323.7	75.4
Nash	353.3	172.3	0.6	--	180.4	51.1
New Hanover	144.0	45.9	21.8	1.2	75.1	61.5
Northampton	348.2	139.8	4.3	--	204.1	59.3
Onslow	515.8	107.5	35.9	7.6	364.8	76.0
Orange	254.7	97.9	0.2	--	156.6	61.5
Pamlico	368.6	63.7	152.4	21.8	130.7	60.5
Pasquotank	185.6	60.3	39.2	--	86.1	58.8
Pender	556.2	85.9	11.5	24.0	434.8	79.8
Perquimans	207.4	64.0	41.1	--	102.3	61.5
Person	256.0	103.7	0.6	--	151.7	59.4
Pitt	419.8	199.7	0.9	--	219.2	52.3
Polk	150.4	38.4	0.7	--	111.3	74.3
Randolph	512.6	175.5	1.0	--	336.1	65.7
Richmond	309.1	104.4	5.1	--	199.6	65.7
Robeson	606.7	313.8	5.3	--	287.6	47.8
Rockingham	366.1	169.8	0.8	--	195.5	53.5
Rowan	337.3	177.6	13.9	(2/)	145.8	45.1
Rutherford	363.5	145.9	2.1	(2/)	215.5	59.6
Sampson	616.3	234.6	0.2	--	381.5	61.9
Scotland	202.9	97.8	0.2	--	104.9	51.8
Stanly	259.8	144.9	6.0	3.8	105.1	41.4
Stokes	293.8	107.5	0.5	3.9	181.9	62.0
Surry	344.3	129.9	1.2	0.9	212.3	61.9
Swain	348.2	19.6	10.4	213.2	105.0	31.1
Transylvania	242.6	21.8	0.2	1.0	219.6	90.6
Tyrrell	373.1	19.1	118.6	7.1	228.3	89.7
Union	411.5	225.1	0.4	(2/)	186.0	45.2
Vance	172.1	75.9	11.6	--	84.6	52.7
Wake	554.9	240.0	2.8	5.2	306.9	55.6
Warren	284.8	79.5	1.4	4.5	199.4	70.4
Washington	268.8	67.0	54.0	28.4	119.4	55.6
Watauga	204.8	89.7	8.2	10.9	96.0	48.8
Wayne	355.2	193.6	0.7	--	160.9	45.4
Wilkes	489.6	106.6	1.1	4.9	377.0	77.2
Wilson	238.7	121.6	0.5	--	116.6	49.0
Yadkin	214.4	100.1	1.1	--	113.2	53.1
Yancey	199.0	52.4	0.5	4.8	141.3	71.2
State total	33,735.7	11,192.2	2,467.8	734.3	19,341.4	62.0

1/ Gross area from Bureau of the Census, 1950.

2/ Less than 50 acres.

Table 26.--Ownership of commercial forest land by county

County	Private		Public						
			National forest	Indian	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alamance	132.0	99.9	--	--	--	--	0.1	0.1	0.1
Alexander	87.4	100.0	--	--	--	--	(1/)	(1/)	--
Alleghany	61.0	100.0	--	--	--	--	(1/)	(1/)	--
Anson	206.3	99.9	--	--	--	0.1	0.1	0.2	0.1
Ashe	139.3	99.6	0.3	--	--	0.3	--	0.6	0.4
Avery	94.4	81.0	22.0	--	--	0.1	--	22.1	19.0
Beaufort	340.3	100.0	--	--	--	--	0.1	0.1	(1/)
Bertie	308.3	99.9	--	--	--	0.3	0.1	0.4	0.1
Bladen	385.0	92.4	--	--	2.7	29.1	--	31.8	7.6
Brunswick	416.8	96.9	--	--	13.2	0.3	--	13.5	3.1
Buncombe	248.5	89.3	29.8	--	0.1	(1/)	(1/)	29.9	10.7
Burke	190.2	77.0	47.3	--	--	3.9	5.7	56.9	23.0
Cabarrus	88.6	99.6	--	--	--	--	0.4	0.4	0.4
Caldwell	188.2	79.0	49.2	--	--	--	0.8	50.0	21.0
Camden	105.0	99.9	--	--	0.1	--	--	0.1	0.1
Carteret	162.9	80.6	38.4	--	0.9	--	--	39.3	19.4
Caswell	158.3	92.7	12.3	--	--	--	0.1	12.4	7.3
Catawba	99.2	99.8	--	--	--	(1/)	0.2	0.2	0.2
Chatham	352.8	99.5	--	--	--	1.6	0.1	1.7	0.5
Cherokee	166.3	65.5	80.7	4.7	2.1	--	(1/)	87.5	34.5
Chowan	65.8	99.4	--	--	0.3	--	0.1	0.4	0.6
Clay	57.1	48.6	57.8	--	2.6	--	--	60.4	51.4
Cleveland	114.5	100.0	--	--	--	--	(1/)	(1/)	--
Columbus	427.6	99.4	--	--	--	2.7	(1/)	2.7	0.6
Craven	285.6	86.6	37.5	--	6.5	0.1	0.1	44.2	13.4
Cumberland	232.4	88.8	--	--	29.0	(1/)	0.3	29.3	11.2
Currituck	95.9	97.8	--	--	1.3	0.8	0.1	2.2	2.2
Dare	158.2	100.0	--	--	--	--	--	--	--
Davidson	169.4	99.3	1.0	--	--	--	0.2	1.2	0.7
Davie	76.0	100.0	--	--	--	(1/)	(1/)	(1/)	--
Duplin	321.5	97.6	--	--	--	8.0	--	8.0	2.4
Durham	112.7	95.8	--	--	1.2	3.4	0.4	5.0	4.2
Edgecombe	166.2	99.8	--	--	--	0.3	(1/)	0.3	0.2
Forsyth	133.6	99.9	--	--	--	--	0.2	0.2	0.1
Franklin	187.5	100.0	--	--	--	(1/)	(1/)	(1/)	--
Gaston	104.4	99.9	--	--	--	(1/)	0.1	0.1	0.1
Gates	158.8	100.0	--	--	--	--	--	--	--
Graham	60.3	36.8	101.4	1.7	0.5	--	--	103.6	63.2
Granville	204.7	93.8	--	--	2.5	10.9	0.1	13.5	6.2
Greene	82.7	99.9	--	--	--	--	0.1	0.1	0.1
Guilford	172.4	97.4	--	--	--	0.2	4.4	4.6	2.6
Halifax	272.8	99.8	--	--	--	0.4	0.1	0.5	0.2
Harnett	221.9	100.0	--	--	--	--	--	--	--
Haywood	124.5	63.2	63.2	--	--	0.1	9.2	72.5	36.8
Henderson	156.9	89.1	18.2	--	--	0.9	0.1	19.2	10.9
Hertford	152.6	100.0	--	--	--	(1/)	--	(1/)	--
Hoke	79.1	49.3	--	--	79.8	1.5	--	81.3	50.7
Hyde	185.6	98.4	--	--	3.1	--	--	3.1	1.6
Iredell	177.7	99.9	--	--	--	(1/)	0.2	0.2	0.1
Jackson	226.2	83.6	26.7	17.4	--	0.2	0.1	44.4	16.4
Johnston	251.0	99.8	--	--	--	0.3	0.2	0.5	0.2
Jones	171.1	76.9	25.0	--	0.3	26.0	--	51.3	23.1

Table 26.--Ownership of commercial forest land by county (continued)

County	Private		Public						
			National forest	Indian	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Lee	121.7	100.0	--	--	--	--	(1/)	(1/)	--
Lenoir	125.7	99.2	--	--	--	0.4	0.6	1.0	0.8
Lincoln	88.1	100.0	--	--	--	(1/)	(1/)	(1/)	--
McDowell	164.0	73.3	59.3	--	--	(1/)	0.5	59.8	26.7
Macon	124.3	46.9	140.5	--	--	0.1	0.1	140.7	53.1
Madison	154.2	76.9	46.2	--	--	(1/)	(1/)	46.2	23.1
Martin	204.5	99.9	--	--	--	--	0.2	0.2	0.1
Mecklenburg	160.7	99.0	--	--	--	0.1	1.6	1.7	1.0
Mitchell	87.5	85.0	15.4	--	--	--	--	15.4	15.0
Montgomery	217.7	86.6	33.7	--	--	--	(1/)	33.7	13.4
Moore	322.4	99.6	--	--	--	1.3	(1/)	1.3	0.4
Nash	180.3	99.9	--	--	--	(1/)	0.1	0.1	0.1
New Hanover	74.1	98.7	--	--	--	0.7	0.3	1.0	1.3
Northampton	204.1	100.0	--	--	--	(1/)	(1/)	(1/)	--
Onslow	247.5	67.8	--	--	71.0	46.0	0.3	117.3	32.2
Orange	154.9	98.9	--	--	--	1.7	--	1.7	1.1
Pamlico	130.2	99.6	--	--	0.5	--	--	0.5	0.4
Pasquotank	85.5	99.3	--	--	0.2	(1/)	0.4	0.6	0.7
Pender	384.0	88.3	--	--	--	50.8	--	50.8	11.7
Perquimans	101.5	99.2	--	--	--	(1/)	0.8	0.8	0.8
Person	151.4	99.8	--	--	--	--	0.3	0.3	0.2
Pitt	218.8	99.8	--	--	--	(1/)	0.4	0.4	0.2
Polk	110.4	99.2	--	--	--	--	0.9	0.9	0.8
Randolph	327.4	97.4	8.1	--	--	(1/)	0.6	8.7	2.6
Richmond	163.3	81.8	--	--	0.8	35.4	0.1	36.3	18.2
Robeson	287.4	99.9	--	--	--	0.1	0.1	0.2	0.1
Rockingham	195.4	99.9	--	--	--	--	0.1	0.1	0.1
Rowan	144.9	99.4	--	--	0.2	0.5	0.2	0.9	0.6
Rutherford	215.4	100.0	--	--	--	--	0.1	0.1	(1/)
Sampson	381.4	100.0	--	--	--	0.1	(1/)	0.1	(1/)
Scotland	77.4	73.8	--	--	4.3	21.2	2.0	27.5	26.2
Stanly	105.1	100.0	--	--	--	--	--	--	--
Stokes	181.9	100.0	--	--	--	--	--	--	--
Surry	211.7	99.7	--	--	--	(1/)	0.6	0.6	0.3
Swain	60.2	57.3	15.5	28.3	1.0	--	--	44.8	42.7
Transylvania	133.5	60.8	86.0	--	--	(1/)	0.1	86.1	39.2
Tyrrell	228.2	100.0	--	--	0.1	--	--	0.1	(1/)
Union	185.8	99.9	--	--	--	(1/)	0.2	0.2	0.1
Vance	78.5	92.8	--	--	5.9	(1/)	0.2	6.1	7.2
Wake	304.8	99.3	--	--	--	1.7	0.4	2.1	0.7
Warren	198.6	99.6	--	--	0.7	(1/)	0.1	0.8	0.4
Washington	119.0	99.7	--	--	--	0.4	(1/)	0.4	0.3
Watauga	95.4	99.4	0.1	--	--	0.2	0.3	0.6	0.6
Wayne	159.7	99.3	--	--	0.6	0.6	(1/)	1.2	0.7
Wilkes	377.0	100.0	--	--	--	(1/)	--	(1/)	--
Wilson	116.2	99.7	--	--	--	0.1	0.3	0.4	0.3
Yadkin	113.1	99.9	--	--	--	0.1	(1/)	0.1	0.1
Yancey	110.3	78.1	31.0	--	--	(1/)	--	31.0	21.9
State total	17,722.6	91.6	1,046.6	52.1	231.5	253.0	35.6	1,618.8	8.4

1/ Less than 50 acres, or 0.05 percent.

Table 27.--Net volume[1] of sawtimber by county and species group

(In million board-feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Oaks and other hard hardwoods	All species
Alamance	156.7	79.1	104.3	340.1
Alexander	81.1	16.1	76.6	173.8
Alleghany	41.2	20.0	58.1	119.3
Anson	348.4	118.3	46.0	512.7
Ashe	21.6	34.8	130.2	186.6
Avery	31.9	50.0	98.0	179.9
Beaufort	888.2	275.9	81.2	1,245.3
Bertie	842.3	529.7	235.9	1,607.9
Bladen	556.6	267.1	116.7	940.4
Brunswick	503.4	164.3	107.3	775.0
Buncombe	242.8	210.5	576.8	1,030.1
Burke	285.5	87.9	162.7	536.1
Cabarrus	96.4	38.1	121.3	255.8
Caldwell	376.5	82.6	236.5	695.6
Camden	195.6	165.9	7.3	368.8
Carteret	345.0	56.1	4.5	405.6
Caswell	228.5	88.7	181.6	498.8
Catawba	111.1	25.0	88.3	224.4
Chatham	470.9	221.6	255.4	947.9
Cherokee	136.4	35.1	284.8	456.3
Chowan	193.1	44.2	51.2	288.5
Clay	32.3	106.1	226.9	365.3
Cleveland	201.8	103.8	25.4	331.0
Columbus	556.7	343.9	176.4	1,077.0
Craven	645.4	251.2	77.9	974.5
Cumberland	275.8	54.9	38.1	368.8
Currituck	311.6	144.0	31.0	486.6
Dare	304.1	127.5	0.2	431.8
Davidson	175.6	114.7	204.3	494.6
Davie	50.0	36.1	56.9	143.0
Duplin	511.1	219.8	115.4	846.3
Durham	115.3	115.6	143.3	374.2
Edgecombe	359.8	213.6	78.0	651.4
Forsyth	83.3	65.8	58.2	207.3
Franklin	386.2	127.7	225.0	738.9
Gaston	127.6	43.0	37.3	207.9
Gates	490.0	191.3	70.2	751.5
Graham	148.0	74.2	255.5	477.7
Granville	394.9	186.0	122.0	702.9
Greene	288.7	106.1	29.9	424.7
Guilford	206.6	129.0	153.2	488.8
Halifax	372.7	333.2	122.4	828.3
Harnett	213.1	140.2	107.1	460.4
Haywood	36.5	72.6	221.1	330.2
Henderson	143.0	34.2	280.8	458.0
Hertford	419.2	260.4	138.0	817.6
Hoke	240.5	107.9	8.2	356.6
Hyde	466.6	209.7	34.0	710.3
Iredell	142.1	62.5	204.5	409.1
Jackson	84.7	109.5	318.7	512.9
Johnston	536.1	284.4	159.8	980.3
Jones	424.2	242.4	113.1	779.7
Lee	95.0	33.7	61.0	189.7

Table 27.--Net volume[1] of sawtimber by county and species group (continued)

(In million board-feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Oaks and other hard hardwoods	All species
Lenoir	210.2	88.0	51.3	349.5
Lincoln	65.9	13.6	51.9	131.4
McDowell	102.5	41.1	295.5	439.1
Macon	70.0	109.1	364.1	543.2
Madison	75.0	97.2	233.7	405.9
Martin	555.0	323.7	97.8	976.5
Mecklenburg	250.0	59.3	145.6	454.9
Mitchell	13.7	71.9	89.6	175.2
Montgomery	257.8	36.7	177.3	471.8
Moore	273.6	147.8	200.1	621.5
Nash	469.9	130.0	97.3	697.2
New Hanover	80.8	9.9	2.1	92.8
Northampton	389.4	262.1	154.5	806.0
Onslow	562.3	157.5	30.2	750.0
Orange	200.0	81.6	155.8	437.4
Pamlico	312.6	102.1	40.5	455.2
Pasquotank	277.1	101.8	32.3	411.2
Pender	491.1	234.7	95.6	821.4
Perquimans	228.6	141.8	79.2	449.6
Person	271.5	59.9	87.3	418.7
Pitt	562.5	289.5	71.3	923.3
Polk	81.2	16.7	47.6	145.5
Randolph	235.1	56.3	249.0	540.4
Richmond	177.7	114.5	36.9	329.1
Robeson	389.7	393.7	78.1	861.5
Rockingham	26.1	64.0	83.9	174.0
Rowan	109.7	111.1	161.0	381.8
Rutherford	127.4	26.2	156.5	310.1
Sampson	423.2	230.8	79.6	733.6
Scotland	156.5	57.7	10.0	224.2
Stanly	121.7	17.9	100.8	240.4
Stokes	134.2	51.5	128.7	314.4
Surry	188.8	41.1	87.4	317.3
Swain	26.8	46.9	104.0	177.7
Transylvania	114.6	72.5	321.9	509.0
Tyrrell	766.7	180.9	9.3	956.9
Union	135.9	44.9	61.0	241.8
Vance	118.7	36.1	30.1	184.9
Wake	548.4	266.1	203.2	1,017.7
Warren	104.2	106.1	167.9	378.2
Washington	257.9	135.2	48.1	441.2
Watauga	87.3	18.8	44.8	150.9
Wayne	403.9	68.1	44.5	516.5
Wilkes	202.5	91.9	206.4	500.8
Wilson	422.7	153.4	32.8	608.9
Yadkin	151.6	10.9	86.9	249.4
Yancey	167.5	46.7	212.1	426.3
State total	26,391.2	12,275.3	12,264.0	50,930.5

[1] Log scale, International 1/4-inch rule.

[2] Includes pine and redcedar.

[3] Includes other soft hardwoods.

Table 28.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Alamance	150.0	6.7	--	71.4	66.1	45.9
Alexander	78.8	2.3	--	42.3	36.9	13.5
Alleghany	13.8	13.2	14.2	33.8	26.9	17.4
Anson	212.1	65.1	71.2	85.7	54.4	24.2
Ashe	14.4	7.2	--	70.7	60.8	33.5
Avery	10.6	13.1	8.2	79.1	33.8	35.1
Beaufort	502.3	273.1	112.8	142.2	140.0	74.9
Bertie	495.5	235.9	110.9	285.9	283.6	196.1
Bladen	355.3	135.5	65.8	194.6	129.1	60.1
Brunswick	364.2	88.6	50.6	119.0	84.5	68.1
Buncombe	128.7	66.7	47.4	256.2	213.0	318.1
Burke	188.5	45.3	51.7	136.9	49.8	63.9
Cabarrus	86.5	9.9	--	67.5	46.3	45.6
Caldwell	200.1	55.1	121.3	158.9	83.7	76.5
Camden	110.2	65.7	19.7	82.6	48.3	42.3
Carteret	255.0	79.2	10.8	46.6	14.0	--
Caswell	198.3	30.2	--	114.2	94.0	62.1
Catawba	101.6	9.5	--	52.2	47.2	13.9
Chatham	378.4	34.0	58.5	260.5	89.0	127.5
Cherokee	83.8	34.8	17.8	144.1	83.6	92.2
Chowan	111.9	59.1	22.1	42.3	30.5	22.6
Clay	5.8	5.9	20.6	104.2	75.4	153.4
Cleveland	176.4	19.2	6.2	48.8	33.5	46.9
Columbus	381.7	113.6	61.4	211.6	159.7	149.0
Craven	422.9	154.0	68.5	146.4	127.3	55.4
Cumberland	225.4	39.2	11.2	53.4	25.4	14.2
Currituck	173.3	80.7	57.6	98.0	49.1	27.9
Dare	188.2	73.9	42.0	88.6	31.4	7.7
Davidson	152.8	13.6	9.2	161.9	94.4	62.7
Davie	47.4	2.6	--	51.2	31.2	10.6
Duplin	320.0	113.7	77.4	138.1	110.0	87.1
Durham	61.6	27.3	26.4	87.5	80.7	90.7
Edgecombe	213.1	103.0	43.7	89.2	118.9	83.5
Forsyth	63.0	20.3	--	49.2	37.4	37.4
Franklin	177.6	148.2	60.4	157.0	81.7	114.0
Gaston	118.7	8.9	--	45.5	17.5	17.3
Gates	307.5	127.0	55.5	109.6	80.9	71.0
Graham	32.9	6.3	108.8	109.1	122.9	97.7
Granville	285.0	65.3	44.6	130.9	66.5	110.6
Greene	135.1	82.1	71.5	37.1	33.9	65.0
Guilford	168.8	37.8	--	144.4	65.9	71.9
Halifax	271.9	64.8	36.0	152.7	145.0	157.9
Harnett	141.7	54.5	16.9	119.3	90.5	37.5
Haywood	15.0	15.7	5.8	104.7	103.2	85.8
Henderson	72.4	35.2	35.4	137.0	86.0	92.0
Hertford	282.0	78.4	58.8	161.6	126.3	110.5
Hoke	151.0	54.5	35.0	43.0	49.2	23.9
Hyde	273.2	135.7	57.7	127.5	82.5	33.7
Iredell	120.9	12.0	9.2	114.7	102.8	49.5
Jackson	5.8	35.0	43.9	206.3	129.9	92.0
Johnston	299.8	107.7	128.6	163.7	149.3	131.2
Jones	277.3	121.4	25.5	113.9	106.0	135.6

Table 28.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group (continued)

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Lee	81.0	7.6	6.4	50.6	26.4	17.7
Lenoir	126.9	58.9	24.4	46.2	34.5	58.6
Lincoln	56.4	9.5	--	38.8	22.8	3.9
McDowell	57.5	8.1	36.9	109.5	93.5	133.6
Macon	22.3	27.2	20.5	165.4	157.9	149.9
Madison	62.3	12.7	--	151.1	106.6	73.2
Martin	341.9	150.0	63.1	120.0	117.2	184.3
Mecklenburg	207.1	16.8	26.1	65.5	62.8	76.6
Mitchell	9.1	4.6	--	39.7	43.2	28.6
Montgomery	217.9	30.5	9.4	143.5	42.3	28.2
Moore	198.7	54.1	20.8	184.4	92.2	71.3
Nash	235.8	132.0	102.1	87.3	74.1	65.9
New Hanover	51.5	18.8	10.5	6.0	2.6	3.4
Northampton	220.4	79.0	90.0	178.5	134.7	103.4
Onslow	414.4	104.7	43.2	75.7	69.6	42.4
Orange	176.5	16.5	7.0	125.2	76.0	36.2
Pamlico	251.9	56.4	4.3	61.3	64.6	16.7
Pasquotank	123.5	125.8	27.8	70.1	31.0	33.0
Pender	372.5	75.6	43.0	124.9	108.3	97.1
Perquimans	128.3	65.7	34.6	104.3	65.3	51.4
Person	255.5	16.0	--	73.6	40.5	33.1
Pitt	333.1	145.5	83.9	137.2	140.9	82.7
Polk	61.9	14.1	5.2	43.1	16.1	5.1
Randolph	204.0	31.1	--	245.5	44.3	15.5
Richmond	168.7	9.0	--	64.8	46.2	40.4
Robeson	246.7	85.7	57.3	215.1	178.2	78.5
Rockingham	21.6	4.5	--	68.3	20.7	58.9
Rowan	92.9	10.8	6.0	116.7	82.4	73.0
Rutherford	122.8	4.6	--	104.1	56.0	22.6
Sampson	292.1	102.0	29.1	141.7	84.3	84.4
Scotland	92.8	38.3	25.4	29.7	21.0	17.0
Stanly	93.8	11.8	16.1	80.6	34.0	4.1
Stokes	103.1	23.2	7.9	65.6	56.7	57.9
Surry	120.5	48.7	19.6	64.1	29.5	34.9
Swain	26.8	--	--	63.0	47.4	40.5
Transylvania	57.3	23.8	33.5	171.5	125.4	97.5
Tyrrell	521.1	195.3	50.3	93.8	58.4	38.0
Union	135.9	--	--	49.5	49.9	6.5
Vance	106.3	7.3	5.1	38.3	17.1	10.8
Wake	341.5	162.9	44.0	198.9	140.6	129.8
Warren	84.2	20.0	--	129.3	87.7	57.0
Washington	183.5	66.0	8.4	100.7	47.8	34.8
Watauga	12.5	6.4	68.4	32.4	23.8	7.4
Wayne	263.4	105.7	34.8	48.5	36.7	27.4
Wilkes	175.0	18.7	8.8	157.7	102.7	37.9
Wilson	216.2	112.9	93.6	68.5	62.3	55.4
Yadkin	133.3	18.3	--	53.5	30.1	14.2
Yancey	37.1	43.9	86.5	107.5	112.1	39.2
State total	17,467.7	5,668.7	3,254.8	10,754.0	7,548.3	6,237.0

[1] Log scale, International 1/4-inch rule.

Table 29.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alamance	826	51	73	3	223	140	302	200	1,818
Alexander	600	37	14	--	50	32	175	150	1,058
Alleghany	9	2	40	51	77	37	182	105	503
Anson	1,284	404	11	4	198	233	238	81	2,453
Ashe	--	--	57	26	146	63	343	274	909
Avery	--	--	37	49	282	92	486	194	1,140
Beaufort	1,599	1,169	62	126	505	584	245	172	4,462
Bertie	1,371	1,013	55	167	1,104	1,191	400	556	5,857
Bladen	1,320	647	40	59	737	489	256	245	3,793
Brunswick	1,303	438	94	114	343	328	136	215	2,971
Buncombe	520	115	67	191	501	397	1,326	1,231	4,348
Burke	963	94	163	157	325	121	730	287	2,840
Cabarrus	428	98	25	2	114	76	335	245	1,323
Caldwell	759	137	267	323	403	124	693	479	3,185
Camden	294	305	141	24	397	334	61	16	1,572
Carteret	1,200	389	30	16	150	128	30	11	1,954
Caswell	971	159	7	--	437	161	357	403	2,495
Catawba	524	68	--	--	29	50	294	163	1,128
Chatham	1,790	379	34	--	705	409	1,008	429	4,754
Cherokee	556	71	58	73	190	67	1,048	518	2,581
Chowan	281	279	7	--	161	86	74	119	1,007
Clay	14	11	11	45	117	196	518	479	1,391
Cleveland	870	165	--	--	183	212	175	57	1,662
Columbus	1,137	665	106	83	705	689	275	366	4,026
Craven	1,390	784	64	65	520	555	202	190	3,770
Cumberland	720	308	21	7	184	99	120	75	1,534
Currituck	430	401	16	61	588	252	150	65	1,963
Dare	738	257	158	76	543	219	4	--	1,995
Davidson	1,004	93	18	--	325	214	491	353	2,498
Davie	336	21	18	2	151	53	178	109	868
Duplin	1,226	591	11	41	575	462	258	230	3,394
Durham	619	137	--	3	259	240	229	294	1,781
Edgecombe	720	506	16	27	262	505	150	187	2,373
Forsyth	417	78	14	--	267	107	298	121	1,302
Franklin	958	559	8	--	326	257	431	455	2,994
Gaston	624	67	2	--	168	87	196	63	1,207
Gates	992	579	109	96	554	410	178	158	3,076
Graham	70	15	51	196	170	147	421	533	1,603
Granville	1,336	430	7	--	506	344	539	209	3,371
Greene	413	425	26	25	103	222	115	58	1,387
Guilford	778	191	14	--	326	226	507	260	2,302
Halifax	1,133	452	4	20	734	695	392	293	3,723
Harnett	627	266	3	9	239	293	247	208	1,892
Haywood	46	49	46	5	319	162	695	455	1,777
Henderson	160	67	82	108	152	56	639	561	1,825
Hertford	863	479	43	53	386	563	275	276	2,938
Hoke	506	303	11	28	190	219	32	13	1,302
Hyde	628	583	69	99	683	399	123	83	2,667
Iredell	451	119	27	4	251	122	340	403	1,717
Jackson	10	8	20	135	177	189	842	626	2,007
Johnston	1,035	761	--	--	418	600	317	322	3,453
Jones	814	466	19	90	300	493	188	226	2,596

Table 29.--Net volume[1/] of all timber by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Lee	594	61	1	--	124	68	206	102	1,156
Lenoir	420	258	15	25	164	183	141	107	1,313
Lincoln	446	50	1	--	138	29	200	96	960
McDowell	271	58	5	64	222	77	700	608	2,005
Macon	169	38	32	73	524	184	639	778	2,437
Madison	140	32	141	36	408	176	563	458	1,954
Martin	994	620	28	119	492	748	171	238	3,410
Mecklenburg	1,048	221	15	--	120	104	278	296	2,082
Mitchell	--	--	23	9	314	114	354	167	981
Montgomery	1,457	186	2	--	199	75	1,120	270	3,309
Moore	1,132	211	37	46	678	256	683	336	3,379
Nash	889	638	15	31	317	297	277	226	2,690
New Hanover	218	57	32	37	55	17	12	5	433
Northampton	695	354	56	176	452	576	209	369	2,887
Onslow	1,239	689	14	33	355	322	95	60	2,807
Orange	1,071	145	--	--	249	143	481	332	2,421
Pamlico	893	323	3	10	330	200	74	108	1,941
Pasquotank	262	437	129	36	314	217	42	64	1,501
Pender	1,434	394	113	84	459	469	315	190	3,458
Perquimans	298	310	28	35	357	311	212	168	1,719
Person	1,259	118	12	--	328	101	224	157	2,199
Pitt	712	745	31	70	658	617	173	163	3,169
Polk	388	63	3	--	36	30	244	76	840
Randolph	1,021	153	81	--	325	78	1,483	315	3,456
Richmond	875	95	3	--	293	240	123	74	1,703
Robeson	714	473	89	73	911	807	90	165	3,322
Rockingham	227	11	3	--	165	100	252	170	928
Rowan	626	73	28	12	239	203	385	323	1,889
Rutherford	1,051	67	--	--	117	69	759	272	2,335
Sampson	1,145	456	37	32	577	427	195	162	3,031
Scotland	312	217	19	20	130	114	14	21	847
Stanly	628	109	--	--	107	35	391	179	1,449
Stokes	505	139	--	--	264	98	609	256	1,871
Surry	851	195	17	20	101	62	304	161	1,711
Swain	110	6	21	--	64	102	212	192	707
Transylvania	132	35	72	94	260	141	762	648	2,144
Tyrrell	1,466	951	183	46	672	368	19	18	3,723
Union	896	32	8	--	132	86	369	126	1,649
Vance	552	111	--	--	110	78	116	57	1,024
Wake	1,503	692	--	--	487	527	623	419	4,251
Warren	685	76	--	--	156	202	469	364	1,952
Washington	476	347	20	22	325	240	96	106	1,632
Watauga	--	--	46	133	98	39	211	92	619
Wayne	578	594	9	--	189	124	64	91	1,649
Wilkes	894	69	162	40	809	173	1,095	369	3,611
Wilson	581	684	3	--	357	322	114	67	2,128
Yadkin	712	118	5	--	81	12	378	161	1,467
Yancey	--	--	117	260	283	76	362	440	1,538
State total	70,232	27,402	3,935	4,299	32,303	24,466	35,152	24,443	222,232

[1/] Sound wood and bark.

Table 29.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alamance	19	5	--	--	44	30	30	30	158
Alexander	42	17	--	--	12	10	65	24	170
Alleghany	25	4	18	8	41	26	68	101	291
Anson	32	--	11	--	51	34	86	68	282
Ashe	46	4	14	27	36	24	241	167	559
Avery	2	--	--	3	35	27	88	165	320
Beaufort	39	3	1	8	205	210	54	97	617
Bertie	97	41	9	11	391	879	212	274	1,914
Bladen	56	18	2	13	247	285	108	95	824
Brunswick	58	23	1	28	174	161	133	110	688
Buncombe	10	--	1	1	56	49	231	322	670
Burke	61	5	10	34	57	30	106	185	488
Cabarrus	1	10	3	2	23	48	84	43	214
Caldwell	200	22	2	--	57	25	245	198	749
Camden	4	4	9	12	154	168	33	16	400
Carteret	56	--	3	4	43	13	24	15	158
Caswell	35	10	--	--	58	70	81	100	354
Catawba	60	--	--	--	16	1	47	21	145
Chatham	18	27	--	--	158	115	221	240	779
Cherokee	9	--	--	--	20	29	119	172	349
Chowan	14	2	--	--	84	109	27	65	301
Clay	--	--	--	1	11	19	50	137	218
Cleveland	22	3	--	--	57	43	75	51	251
Columbus	55	16	1	9	288	365	80	186	1,000
Craven	60	60	1	--	128	236	95	134	714
Cumberland	29	15	3	2	65	43	63	30	250
Currituck	--	18	--	--	73	137	37	27	292
Dare	82	17	5	13	147	62	36	2	364
Davidson	13	--	--	--	39	42	70	71	235
Davie	9	--	--	--	29	14	16	14	82
Duplin	37	13	--	--	101	201	155	92	599
Durham	91	4	--	--	43	66	52	86	342
Edgecombe	23	24	3	3	69	365	103	104	694
Forsyth	96	--	4	--	23	37	35	62	257
Franklin	20	--	--	--	108	42	98	76	344
Gaston	74	10	--	--	36	6	64	24	214
Gates	16	20	7	59	102	291	47	51	593
Graham	52	10	--	6	51	102	185	558	964
Granville	24	4	--	--	48	57	97	58	288
Greene	9	5	2	--	35	53	26	18	148
Guilford	8	12	--	--	64	16	48	70	218
Halifax	57	29	--	9	95	336	137	203	866
Harnett	8	10	--	--	52	87	168	78	403
Haywood	29	5	3	--	135	82	281	408	943
Henderson	76	27	9	21	33	57	310	255	788
Hertfort	12	11	12	49	79	202	105	129	599
Hoke	5	10	--	7	58	58	34	8	180
Hyde	44	10	7	9	152	121	97	25	465
Iredell	104	10	--	--	79	11	202	82	488
Jackson	43	12	--	--	76	78	444	602	1,255
Johnston	41	--	--	--	171	273	149	128	762
Jones	43	8	--	3	69	170	64	53	410

Table 29.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Lee	6	4	--	--	16	32	31	61	150
Lenoir	6	3	--	2	21	65	[illegible]	[illegible]	201
Lincoln	22	7	--	--	16	47	[illegible]	[illegible]	194
McDowell	90	23	4	--	[illegible]	104	[illegible]	401	1,089
Macon	64	5	9	30	55	103	418	580	1,264
Madison	112	6	11	30	66	62	305	298	890
Martin	32	13	2	7	153	508	46	87	848
Mecklenburg	20	16	19	--	77	62	68	87	349
Mitchell	--	--	--	--	42	28	82	108	260
Montgomery	23	8	--	--	115	36	132	112	426
Moore	49	5	--	--	109	90	141	107	501
Nash	17	21	--	--	75	74	93	87	367
New Hanover	8	3	--	3	16	11	15	2	58
Northampton	68	5	5	3	260	216	63	168	788
Onslow	72	12	--	--	133	158	67	30	472
Orange	4	4	2	--	63	31	46	40	190
Pamlico	21	3	--	--	77	61	29	40	231
Pasquotank	--	6	3	--	114	217	27	20	387
Pender	72	13	9	16	241	175	139	100	765
Perquimans	3	6	--	--	101	58	33	66	267
Person	51	--	9	--	82	40	25	33	240
Pitt	26	19	8	--	170	248	104	176	751
Polk	142	21	1	--	45	5	134	119	467
Randolph	64	7	--	--	182	37	327	130	747
Richmond	17	--	--	--	76	91	89	34	307
Robeson	17	--	8	5	251	352	78	61	772
Rockingham	489	14	--	--	123	73	112	46	857
Rowan	22	12	5	--	60	14	71	45	229
Rutherford	50	3	--	--	90	24	142	211	520
Sampson	31	13	4	--	133	156	206	65	608
Scotland	3	--	--	--	39	30	34	5	111
Stanly	68	--	2	--	48	2	88	47	255
Stokes	34	18	--	--	51	22	149	65	339
Surry	244	28	--	--	18	33	348	76	747
Swain	22	3	--	--	16	30	78	111	260
Transylvania	56	27	--	--	73	112	402	493	1,163
Tyrrell	123	36	29	3	206	242	80	20	739
Union	--	--	13	--	47	72	131	114	377
Vance	25	5	1	--	45	72	38	22	208
Wake	59	5	2	--	59	65	133	63	386
Warren	14	--	--	--	73	144	60	44	335
Washington	11	15	7	3	175	251	36	44	542
Watauga	--	--	5	55	86	31	283	203	663
Wayne	5	23	--	--	46	75	44	43	236
Wilkes	385	38	42	--	113	16	378	222	1,194
Wilson	17	7	--	--	97	118	49	39	327
Yadkin	109	3	--	--	73	6	60	43	294
Yancey	--	--	47	120	42	60	321	295	885
State total	4,839	1,018	388	619	8,812	10,574	11,986	11,676	49,912

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[1] Sound wood and bark.

Table 30.--Average annual volume of sawtimber cut by county and species group[1]

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alamance	1.6	--	2.3	8.2	12.1
Alexander	9.8	--	1.2	1.6	12.6
Alleghany	0.3	1.9	0.8	2.7	5.7
Anson	14.5	--	5.9	11.2	31.6
Ashe	0.8	5.8	1.8	5.8	14.2
Avery	0.3	1.9	1.6	4.9	8.7
Beaufort	28.9	--	4.7	1.7	35.3
Bertie	52.4	1.8	13.8	1.9	69.9
Bladen	34.1	--	19.7	2.8	56.6
Brunswick	10.7	--	--	--	10.7
Buncombe	2.9	5.2	3.3	10.8	22.2
Burke	5.3	4.5	2.0	7.3	19.1
Cabarrus	6.3	--	1.3	1.8	9.4
Caldwell	4.7	9.6	1.8	7.1	23.2
Camden, Chowan & Pasquotank	4.5	1.3	5.8	3.1	14.7
Carteret	15.4	--	1.0	--	16.4
Caswell	--	--	--	0.7	0.7
Catawba	16.8	--	0.3	3.6	20.7
Chatham	19.0	0.2	--	--	19.2
Cherokee	5.4	3.5	1.6	6.1	16.6
Clay	0.5	2.2	1.0	3.4	7.1
Cleveland	9.2	--	--	1.0	10.2
Columbus	44.5	1.8	27.6	1.3	75.2
Craven	16.8	--	4.6	0.4	21.8
Cumberland	27.4	--	0.4	1.6	29.4
Currituck	8.7	0.7	--	--	9.4
Dare	3.5	0.1	--	--	3.6
Davidson	1.4	--	--	--	1.4
Davie	8.0	0.2	0.2	--	8.4
Duplin	40.5	--	7.6	--	48.1
Durham	12.1	--	2.5	1.5	16.1
Edgecombe	17.2	3.5	7.3	--	28.0
Forsyth	12.5	0.2	7.0	6.0	25.7
Franklin	33.1	--	1.1	0.5	34.7
Gaston	12.3	--	1.1	--	13.4
Gates	9.2	--	7.6	4.0	20.8
Graham	1.7	2.9	0.9	3.5	9.0
Granville	20.8	--	6.3	9.0	36.1
Greene	12.7	1.5	--	--	14.2
Guilford	7.3	--	2.5	15.4	25.2
Halifax	36.1	3.3	7.5	10.4	57.3
Harnett	16.4	--	0.2	1.5	18.1
Haywood	1.3	4.8	2.0	6.5	14.6
Henderson	2.4	4.9	1.8	6.4	15.5
Hertford	13.7	--	3.8	1.5	19.0
Hoke	10.2	0.3	0.8	--	11.3
Hyde	42.4	1.9	9.2	--	53.5
Iredell	17.2	--	2.5	10.0	29.7
Jackson	1.6	5.6	3.3	10.7	21.2
Johnston	41.6	--	0.7	1.2	43.5
Jones	5.7	--	--	--	5.7
Lee	10.7	--	--	1.0	11.7

Table 30.--Average annual volume of sawtimber cut by county and species group[1]

(continued)

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Lenoir	11.4	--	1.3	--	12.7
Lincoln	6.0	0.4	--	1.9	8.3
McDowell	3.8	3.3	1.8	6.3	15.2
Macon	1.6	4.0	2.2	7.8	15.6
Madison	1.9	4.9	2.2	7.3	16.3
Martin	34.0	1.7	9.3	--	45.0
Mecklenburg	15.0	0.5	--	--	15.5
Mitchell	0.3	1.7	1.4	4.5	7.9
Montgomery	19.6	--	2.4	7.3	29.3
Moore	16.6	--	--	1.7	18.3
Nash	17.7	--	1.8	0.6	20.1
New Hanover	11.3	2.0	--	--	13.3
Northampton	14.3	0.9	1.4	6.2	22.8
Onslow	27.3	--	5.8	1.5	34.6
Orange	3.5	--	3.3	--	6.8
Pamlico	11.6	--	2.7	--	14.3
Pender	26.2	0.4	3.4	--	30.0
Perquimans	9.7	--	2.2	0.8	12.7
Person	9.2	--	2.0	0.8	12.0
Pitt	40.4	1.0	18.2	--	59.6
Polk	12.9	--	0.6	1.4	14.9
Randolph	36.9	--	2.9	5.8	45.6
Richmond	24.9	0.1	2.5	0.3	27.8
Robeson	44.5	0.6	9.9	0.5	55.5
Rockingham	16.9	--	1.1	1.9	19.9
Rowan	2.7	2.5	6.7	2.9	14.8
Rutherford	10.8	--	--	2.9	13.7
Sampson	27.9	--	2.0	1.4	31.3
Scotland	4.8	--	--	--	4.8
Stanly	1.3	--	--	0.8	2.1
Stokes	7.2	--	1.1	7.6	15.9
Surry	8.5	--	1.4	2.6	12.5
Swain	1.4	1.7	1.1	3.8	8.0
Transylvania	1.7	5.7	1.8	6.6	15.8
Tyrrell	6.1	4.0	--	--	10.1
Union	11.0	--	11.5	0.5	23.0
Vance	11.7	--	0.3	0.7	12.7
Wake	80.6	--	12.2	11.9	104.7
Warren	44.3	--	0.9	--	45.2
Washington	3.6	1.5	0.7	3.2	9.0
Watauga	0.4	3.2	1.3	4.2	9.1
Wayne	9.0	--	1.1	--	10.1
Wilkes	8.0	7.5	3.6	12.9	32.0
Wilson	12.2	--	--	0.2	12.4
Yadkin	9.2	--	--	5.0	14.2
Yancey	0.4	5.1	1.5	5.0	12.0
State total	1,412.7	122.3	304.0	306.9	2,145.9

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[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 31.--Average annual volume of growing stock cut by county and species group[1]

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alamance	5	2	7	21	35
Alexander	77	--	4	4	85
Alleghany	1	4	3	8	16
Anson	80	--	14	31	125
Ashe	4	11	7	17	39
Avery	2	4	6	14	26
Beaufort	83	4	16	9	112
Bertie	142	5	45	12	204
Bladen	117	--	45	8	170
Brunswick	37	--	--	--	37
Buncombe	14	10	12	32	68
Burke	25	9	7	22	63
Cabarrus	21	1	6	7	35
Caldwell	21	19	7	21	68
Camden, Chowan & Pasquotank	14	3	21	10	48
Carteret	45	--	6	1	52
Caswell	18	--	6	9	33
Catawba	68	1	6	19	94
Chatham	76	2	--	--	78
Cherokee	23	7	7	20	57
Clay	3	5	4	10	22
Cleveland	28	--	--	4	32
Columbus	123	4	62	12	201
Craven	56	--	19	4	79
Cumberland	73	--	4	6	83
Currituck	21	2	--	--	23
Dare	9	--	--	--	9
Davidson	5	--	--	--	5
Davie	31	1	2	--	34
Duplin	112	--	18	1	131
Durham	51	1	13	10	75
Edgecombe	41	8	21	--	70
Forsyth	40	--	21	30	91
Franklin	124	--	11	10	145
Gaston	50	--	5	6	61
Gates	24	--	19	11	54
Graham	7	6	5	11	29
Granville	56	1	32	31	120
Greene	27	3	--	--	30
Guilford	36	--	7	38	81
Halifax	101	6	19	28	154
Harnett	49	--	1	4	54
Haywood	7	9	8	20	44
Henderson	12	10	7	19	48
Hertford	41	3	12	7	63
Hoke	28	1	3	--	32
Hyde	120	5	25	1	151
Iredell	78	2	8	36	124
Jackson	8	11	13	32	64
Johnston	121	--	4	3	128
Jones	18	--	--	--	18
Lee	29	--	--	3	32

Table 31.--Average annual volume of growing stock cut by county and species group[1/]

(continued)

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Lenoir	25	--	3	--	28
Lincoln	33	1	1	5	40
McDowell	17	7	7	19	50
Macon	8	8	10	23	49
Madison	9	10	8	22	49
Martin	85	4	24	--	113
Mecklenburg	46	1	--	--	47
Mitchell	2	3	6	13	24
Montgomery	86	--	9	24	119
Moore	59	--	--	5	64
Nash	51	2	7	5	65
New Hanover	33	4	--	--	37
Northampton	41	2	3	18	64
Onslow	81	--	13	9	103
Orange	24	--	9	--	33
Pamlico	33	--	7	--	40
Pender	76	2	8	--	86
Perquimans	28	2	7	3	40
Person	54	--	7	5	66
Pitt	120	2	59	4	185
Polk	46	--	7	10	63
Randolph	120	1	18	32	171
Richmond	70	1	6	1	78
Robeson	115	1	29	3	148
Rockingham	64	1	13	13	91
Rowan	8	6	22	10	46
Rutherford	52	--	--	9	61
Sampson	92	--	7	5	104
Scotland	14	--	--	--	14
Stanly	9	--	--	4	13
Stokes	32	--	6	26	64
Surry	36	--	5	8	49
Swain	7	3	4	11	25
Transylvania	9	11	8	20	48
Tyrrell	20	9	--	--	29
Union	43	--	32	4	79
Vance	37	--	1	4	42
Wake	272	--	31	32	335
Warren	158	--	3	--	161
Washington	9	4	9	10	32
Watauga	2	6	5	12	25
Wayne	29	--	2	--	31
Wilkes	39	15	13	38	105
Wilson	32	--	--	1	33
Yadkin	33	--	1	16	50
Yancey	2	10	6	15	33
State total	4,663	276	984	1,041	6,964

[1/] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

STANDARD FOREST SURVEY TABLES

The tables which appear on the following pages have been standardized as to format and contents so that forest statistics for North Carolina can be compared or combined with similar statistics for other states. This practice is being followed to provide readers with comparable data on forest area, timber volumes, growth, and timber cut for each state as the initial surveys or resurveys are completed.

Table I.--Land area by major classes of land, North Carolina, 1955

Class of land	Area
	Thousand acres
Forest:	
Commercial	19,341
Noncommercial:	
Productive-reserved	341
Unproductive	394
Total forest land	20,076
Nonforest land[1]	11,346
Total, all classes	31,422

[1] Includes 17,400 acres of Census water created since 1950, and 136,800 acres of water in small lakes and streams defined by the Bureau of the Census as land area.

Table II.--Commercial forest land area by ownership and stand-size class, North Carolina, 1955

(In thousand acres)

Ownership class	Total	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Nonstocked & other areas[1]
Federally owned or managed:					
National forest	1,047	554	355	96	42
Indian	52	30	12	5	5
Bur. Land Mgmt.	--	--	--	--	--
Other	231	69	59	61	42
Total Federal	1,330	653	426	162	89
State	253	59	77	87	30
County & municipal	36	22	8	6	--
Private:					
Farm	13,268	5,489	4,882	2,513	384
Industrial & other	4,454	1,945	1,292	1,071	146
All ownerships	19,341	8,168	6,685	3,839	649

[1] Includes areas not classified elsewhere.

Table III.--Area of commercial forest land by major forest types, North Carolina, 1955

Forest type	Thousand acres
White-red-jack pine	206
Spruce-fir	14
Longleaf-slash pine	672
Loblolly-shortleaf pine	7,570
Oak-pine	2,027
Oak-hickory	5,412
Oak-gum-cypress	3,199
Elm-ash-cottonwood	--
Maple-beech-birch	241
Aspen-birch	--
Total	19,341

Table IV.--Net volume of live sawtimber and growing stock on commercial forest land by stand-size class, North Carolina, 1955

Stand-size class	Sawtimber	Growing stock
	Million bd.-ft.	Million cu. ft.
Sawtimber stands	43,224	11,889
Poletimber stands	5,775	3,747
Seedling & sapling stands	1,718	556
Nonstocked and other areas not elsewhere classified	213	60
Total	50,930	16,252

Table V.--Net volume of live sawtimber and growing stock on commercial forest land by ownership class, North Carolina, 1955

Ownership class	Sawtimber	Growing stock
	Million bd.-ft.	Million cu. ft.
Federally owned or managed:		
National forest	3,243	938
Indian	147	37
Bureau of Land Mgmt.	--	--
Other	481	137
Total Federal	3,871	1,112
State	502	150
County & municipal	128	41
Private:		
Farm	34,107	11,225
Industrial & other	12,322	3,724
Total private	46,429	14,949
All ownerships	50,930	16,252

Table VI.--Net volume of live sawtimber and growing stock on commercial forest land by species, North Carolina, 1955

Species	Sawtimber	Growing stock
	Million bd.-ft.	Million cu. ft.
Softwoods:		
Longleaf and slash pines	820	286
Shortleaf and loblolly pines	18,811	5,460
Other southern yellow pines	3,755	1,290
Spruce and balsam fir	133	28
White and red pines	769	177
Jack pine	--	--
Hemlock	570	105
Cypress	1,328	289
Other eastern softwoods	205	98
Total softwoods	26,391	7,733
Hardwoods:		
White & swamp chestnut oaks	2,622	909
Other white oaks	1,674	624
Northern red, swamp red, & shumard oaks	1,376	400
Other red oaks	3,134	1,114
Yellow birch	48	13
Sugar maple	64	29
Soft maple	1,016	497
Beech	312	112
Sweetgum	3,212	1,051
Tupelo and blackgum	4,520	1,426
Ash	561	211
Hickory	1,752	558
Cottonwood and aspen	20	6
Basswood	223	84
Yellow-poplar	2,624	865
Black walnut	59	23
Other eastern hardwoods	1,322	597
Total hardwoods	24,539	8,519
All species	50,930	16,252

Table VII.--Net volume of live sawtimber on commercial forest land by diameter-class group and species, North Carolina, 1955

(In million board-feet)

Species	Diameter-class groups						Total
	10-inch	12-inch	14-inch	16-inch	18-inch	20-inch and larger	
So. yellow pines	5,683	5,973	4,644	3,063	1,825	2,198	23,386
White and red pines	129	121	76	87	107	249	769
Other eastern softwoods	193	319	329	317	270	808	2,236
Total softwoods	6,005	6,413	5,049	3,467	2,202	3,255	26,391
White & swamp chestnut oaks	--	595	543	446	318	720	2,622
Other white oaks	--	381	348	224	188	533	1,674
No. red, swamp red, & shumard oaks	--	203	219	192	189	573	1,376
Other red oaks	--	654	657	503	409	911	3,134
Yellow birch	--	7	5	2	14	20	48
Sugar maple	--	16	15	11	15	7	64
Beech	--	59	37	61	44	111	312
Sweetgum	--	675	749	606	488	694	3,212
Tupelo & blackgum	--	976	1,201	877	599	867	4,520
Yellow-poplar	--	608	615	451	350	600	2,624
Other eastern hardwoods	--	1,135	1,056	845	716	1,201	4,953
Total hardwoods	--	5,309	5,445	4,218	3,330	6,237	24,539
All species	6,005	11,722	10,494	7,685	5,532	9,492	50,930

Table VIII.--Net volume of all timber on commercial forest land by class of material and species group, North Carolina, 1955

(In million cubic feet)

Class of material	Total	Softwoods	Hardwoods
Growing stock:			
Sawtimber trees:			
Saw-log portion	8,416	4,399	4,017
Upper stem portion	2,209	1,008	1,201
Total sawtimber	10,625	5,407	5,218
Poletimber trees	5,627	2,326	3,301
Total growing stock	16,252	7,733	8,519
Other material:			
Sound cull trees	2,560	470	2,090
Rotten cull trees	450	30	420
Hardwood limbs	658	--	658
Salvable dead trees	7	4	3
Total other material	3,675	504	3,171
Total, all timber	19,927	8,237	11,690

Table IX.--Net annual growth, annual mortality, and annual cut of live sawtimber and growing stock on commercial forest land by species group, North Carolina, 1955

Item	Sawtimber			Growing stock		
	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
	Million board-feet			Million cubic feet		
Net annual growth	2,978	1,787	1,191	871	448	423
Annual mortality	312	162	150	96	50	46
Annual timber cut						
Timber products	2,099	1,518	581	467	339	128
Logging residues	47	17	30	59	32	27
Total cut	2,146	1,535	611	526	371	155

Table X.--Output of timber products and annual cut of live sawtimber and growing stock, North Carolina, 1955

Product	Output of timber products					Annual cut of sawtimber			Annual cut of growing stock		
	Volume in standard units		Roundwood volume								
	Standard units	Number	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
			Thousand cubic feet			Thousand board-feet			Thousand cubic feet		
Saw logs	M bd.-ft.[1]	1,561,812	258,822	204,567	54,255	1,614,292	1,265,918	348,374	298,478	230,261	68,217
Veneer logs and bolts	M bd.-ft.[1]	143,329	22,284	3,276	19,008	157,590	21,829	135,761	30,558	4,478	26,080
Cooperage logs and bolts	M bd.-ft.[1]	2,887	488	378	110	3,316	2,478	838	617	439	178
Pulpwood[2]	Std. cords[3]	1,554,681	110,848	88,000	22,848	267,148	208,837	58,311	101,778	81,880	19,898
Fuelwood[2]	Std. cords[4]	2,036,298	130,905	68,872	62,033	31,373	--	31,373	68,701	40,404	28,297
Piling	M linear ft.	2,126	1,450	1,374	76	7,737	7,347	390	1,701	1,612	89
Poles	M pieces	169	2,096	2,096	--	11,427	11,427	--	2,419	2,419	--
Posts	M pieces	13,273	8,720	4,403	4,317	5,795	2,976	2,819	5,442	2,748	2,694
Hewn ties	M pieces	72	428	77	351	2,969	526	2,443	658	107	551
Mine timbers	M cu. ft.	118	118	21	97	238	42	196	133	21	112
Miscellaneous[5]	M cu. ft.[6]	13,295	13,295	5,597	7,698	44,015	13,620	30,395	15,615	6,231	9,384
Total	--	--	549,454	378,661	170,793	2,145,900	1,535,000	610,900	526,100	370,600	155,500

[1] International 1/4-inch rule.

[2] Rough wood basis.

[3] Not including 1,436 thousand cubic feet of wood from mill residues used for pulp and other fibre.

[4] Not including 32,726 thousand cubic feet of wood from mill residues used for domestic and industrial fuel.

[5] Includes excelsior bolts, handle stock, farm timbers, etc.

[6] Not including 6 thousand cubic feet of mill residues used for miscellaneous products.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

> Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is shortleaf, pitch, or Virginia pine species. In mixtures the predominating species determines the type.
>
> White pine: Forests in which 50 percent or more of the stand is eastern white pine and hemlock, either singly or in combination.
>
> Spruce-fir: Forests in which 50 percent or more of the stand is spruce and balsam fir species.

Oak-pine type: Forests in which 50 percent or more of the stand is hardwoods, usually upland oaks, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type:

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, elm, or maple, in mixture with cypress and other associated species, except where pines comprise 25-49 percent of the stand.

Maple-beech-birch type: Forests in which 50 percent or more of the stand is made up of hard maple, beech, or yellow birch, singly or in combination. Commonly associated species include white pine, hemlock, basswood, buckeye, and southern red oak.

Site Quality

Site quality of pine and oak-pine types is based on the total height of pine at age 50 years. For loblolly pine and oak-loblolly pine types, an index of 60 feet or shorter is regarded as poor site, 70 fair site, and 80 and taller good site.

For other pine and oak-pine types, a site index of 50 feet or shorter is considered poor site, 60 fair site, and 70 and taller good site.

Site quality of hardwood types is based upon the number of 16-foot saw logs in hardwood trees at maturity. Sites capable of growing hardwoods with three or more saw logs are considered good sites, 2 logs fair sites, and 1 log and less poor sites.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber. To be merchantable, all saw logs must be at least 8 feet long and at least 50 percent sound. They must also meet the following requirements:

Softwood logs[2] must have a scaling diameter of 6 inches or larger, and sweep or crook must not exceed two-thirds of the scaling diameter.

Hardwood logs must have a scaling diameter of 8 inches or larger and must pass specifications[3] for standard lumber logs, or tie and timber logs.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber- or sawtimber-size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Include longleaf, shortleaf, loblolly, pitch, Table-Mountain, Virginia, and pond pine.

Other softwoods: Cypress, white pine, hemlock, eastern redcedar, Atlantic whitecedar, spruce, and balsam fir.

Soft hardwoods: Blackgum, tupelo, sweetgum, yellow-poplar, cottonwood, soft maple, basswood, elm, sycamore, hackberry, buckeye, willow, cucumber, and sweetbay.

Hard hardwoods: All of the oaks, hickories, ash, beech, birch, hard maple, mulberry, black locust, black walnut, holly, dogwood, persimmon, and sourwood.

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[2] For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Sta., 18 pp. 1953.

[3] For detailed hardwood log-grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Serv., Forest Products Lab., D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs which are at least 4.0 inches in diameter inside bark is shown separately for all sawtimber-size hardwoods.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The estimated volume of net growth includes the growth on the present growing stock, the growth on trees which died or were cut during the year, and the ingrowth resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on growth of sound trees. Growth of "other material" is not included.

> In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.
>
> In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees estimated to have been cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

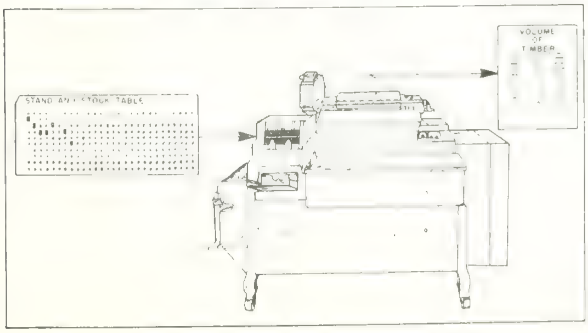
HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

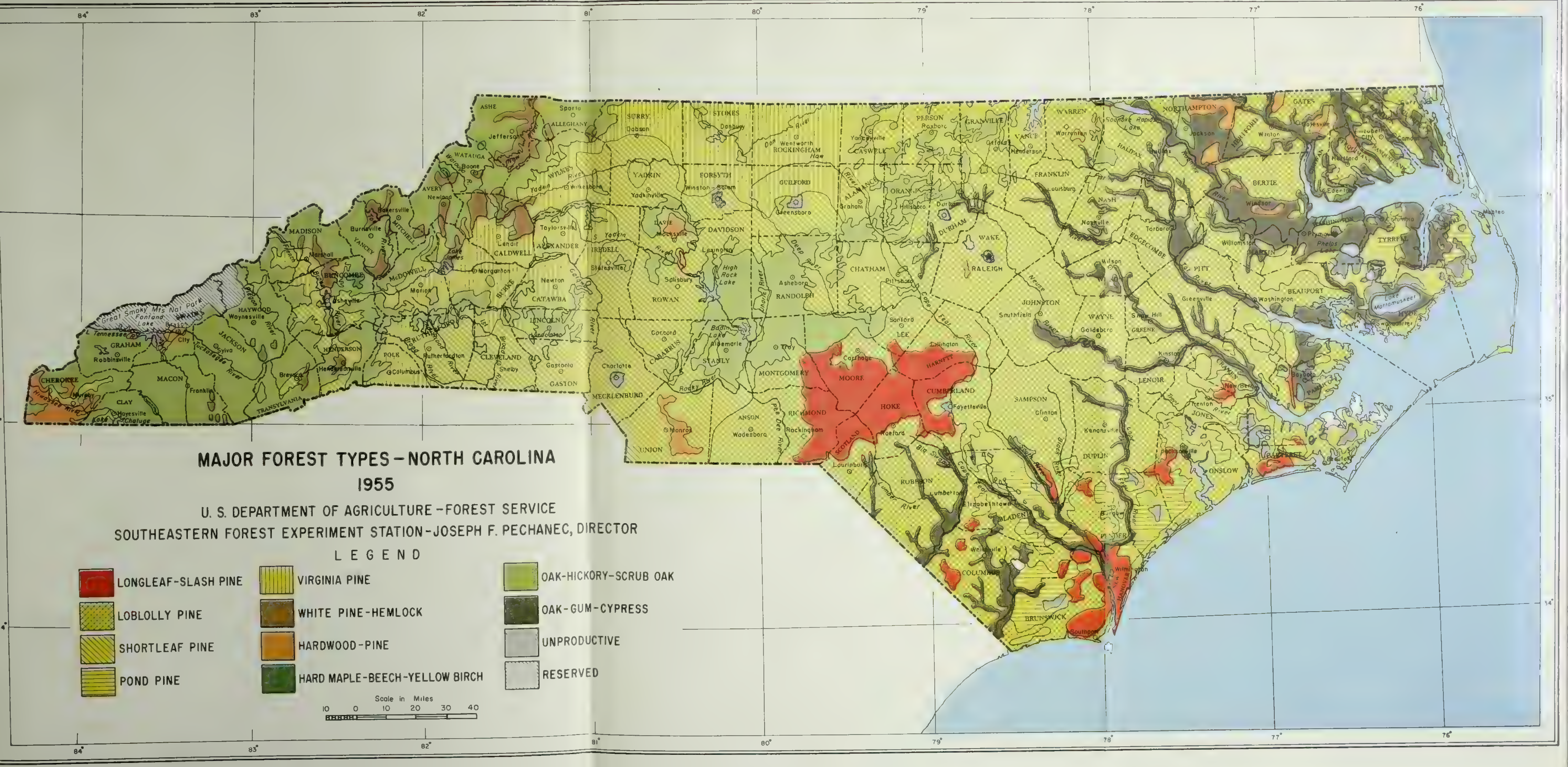
1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.



MAJOR FOREST TYPES – NORTH CAROLINA
1955

U. S. DEPARTMENT OF AGRICULTURE – FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION – JOSEPH F. PECHANEC, DIRECTOR

L E G E N D

🟥 LONGLEAF-SLASH PINE

▨ LOBLOLLY PINE

▨ SHORTLEAF PINE

▤ POND PINE

▥ VIRGINIA PINE

🟫 WHITE PINE-HEMLOCK

🟧 HARDWOOD-PINE

🟩 HARD MAPLE-BEECH-YELLOW BIRCH

🟩 OAK-HICKORY-SCRUB OAK

⬛ OAK-GUM-CYPRESS

⬜ UNPRODUCTIVE

⬜ RESERVED

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

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Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

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Agriculture--Asheville

FOREST SURVEY RELEASE NO. 50

JUNE 1957

FOREST STATISTICS FOR THE COASTAL PLAIN OF VIRGINIA, 1956

AGRICULTURAL [illegible]
[illegible]

by

Mackay B. Bryan, Forester

Division of Forest Economics

U. S. Department of Agriculture
Forest Service
Southeastern Forest Experiment Station
Joseph F. Pechanec, Director

in cooperation with the
Virginia
Department of Conservation and Development
Division of Forestry
George W. Dean, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the southeastern states the Forest Survey is an activity of the Division of Forest Economics, Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

ACKNOWLEDGMENTS

The Southeastern Station received material assistance on the field phase of the Survey and wishes to acknowledge this cooperation. The Virginia Division of Forestry furnished personnel and equipment for one field crew, and the pulp and paper companies listed below contributed funds through Virginia Forests, Inc., to finance a second crew.

Camp Manufacturing Company
Chesapeake Corp. of Virginia
Continental Can Company
P. H. Glatfelter Company
Johns-Manville Products Corp.
Mead Corporation
National Container Corp. of Va.
West Virginia Pulp and Paper Co.

The Division of Forest Economics at the Southeastern Station is under the direction of J. F. McCormack. Collection of field data was supervised by Ronald C. Froelich and aerial photo interpretation was done by W. H. B. Haines. Other staff assistance was as follows:

Field inventory

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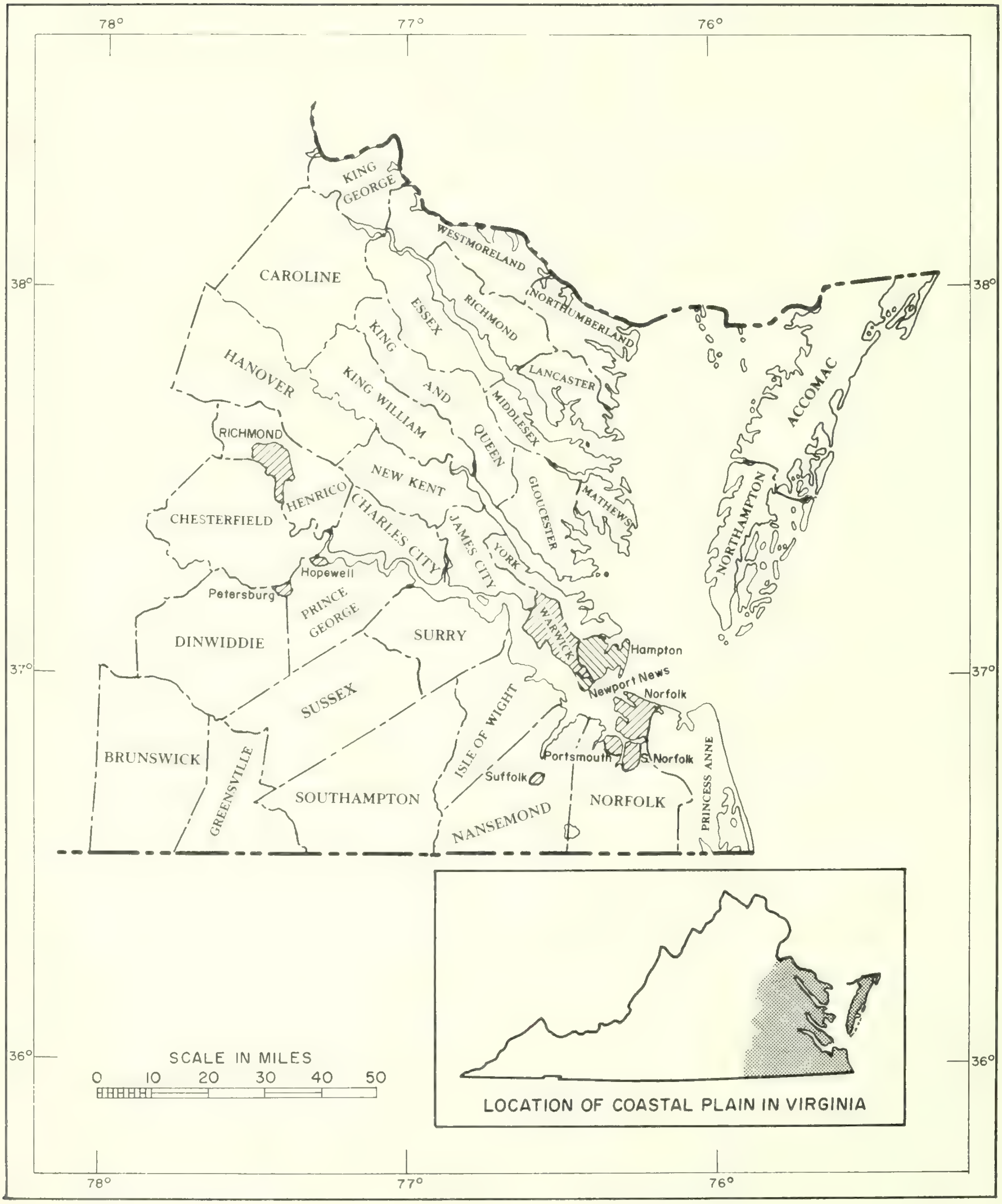


Figure 1.--Counties and independent (noncounty) cities in the Virginia Coastal Plain.

FOREST STATISTICS FOR THE COASTAL PLAIN OF VIRGINIA, 1956

The Coastal Plain of Virginia lies in the eastern quarter of the State extending from the Potomac River to the North Carolina line (fig. 1). It includes 30 counties on the Virginia mainland west of Chesapeake Bay and the 2 counties on the Eastern Shore. The topography is rather flat along the coast and Chesapeake Bay, becoming gently rolling near the boundary with the Piedmont. The Potomac, Rappahannock, York, and James Rivers break the central and northern portion of the Coastal Plain into three long peninsulas extending in a southeasterly direction to Chesapeake Bay.

The first Forest Survey of Virginia was made in 1940. In the spring of 1956 a resurvey of the State was begun to obtain up-to-date statistics on forest area, timber volume, growth, and amount of timber cut. This is the first of three progress reports to be issued before publication of a statistical report for the entire State; and it covers the Virginia Coastal Plain, which is designated as Survey Unit Number 1.

Comparison of the results of the two surveys is made in the following pages to point out changes and trends that have taken place in the 16-year interval. In order to permit true comparisons, the 1940 data were examined carefully and adjustments were made to eliminate differences resulting from changes in standards and definitions.

Area estimates of forest and other land use classes were based on examination of 46,000 points systematically spaced on aerial photographs. Subsamples of 1,386 photo points classified as forest and 383 classified as nonforest were visited on the ground. Data from these field sample plots were used to adjust for changes in land use since date of photography, as well as to provide detailed information on forest conditions.

PRESENT CONDITION AND RECENT TRENDS

Small increase in forest land area.--The 1956 Survey shows that 4.1 million acres or 65 percent of the land in the Coastal Plain is forested (table 1). This is an increase of 4.4 percent or 172,000 acres since 1940. All but 49,000 acres or 99 percent of the total forest area is suitable and available for timber production. The 49,000 acres of unproductive forest land and productive public forest land withdrawn from timber production is about double the area reported in 1940. This increase results mainly from use of forest land in defense installations for target impact areas and other uses that render the timber unsuitable or the areas unsafe for timber harvest operations.

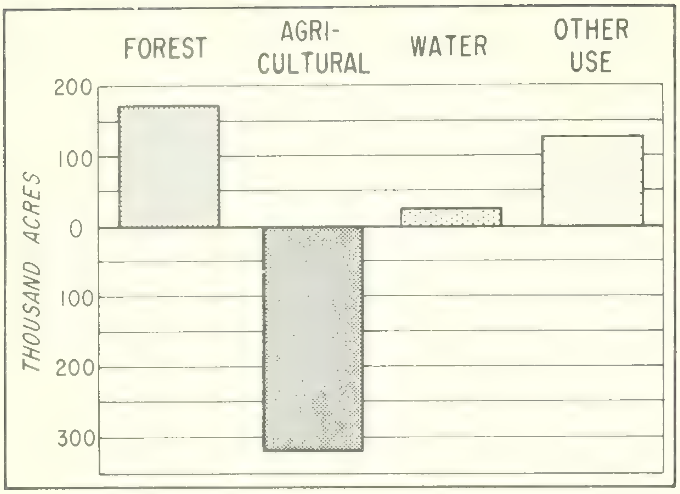
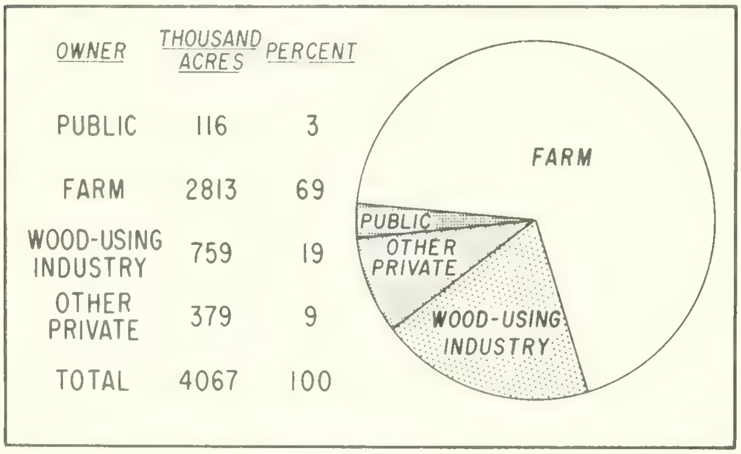


Figure 2.--Change in land use, 1940 to 1956.

Agricultural land, including land in cultivation, pasture, and idle or resting cropland, has been reduced 17 percent in the past 16 years. About half of this reduction in agricultural land reverted to forest, 7 percent was covered by small bodies of water, and 40 percent was utilized in expanded urban areas, suburban developments, roads, airports, and other nonforest and nonagricultural uses (fig. 2).

Forest land predominately in farm ownership.--Sixty-nine percent of the commercial forest land in the Virginia Coastal Plain was on farms (fig. 3). Nineteen percent was owned by pulp and paper companies, sawmills, and other wood-using industries, and nine percent was in other private ownerships. Federal, state, county, and municipal ownerships accounted for the other three percent. Forest land ownership estimates were based primarily upon classification of each of the 1,370 ground sample plots established on forest land. The only exception was that of public ownership, which received a 100-percent canvass to determine acreages and policy on timber production.



OWNER	THOUSAND ACRES	PERCENT
PUBLIC	116	3
FARM	2813	69
WOOD-USING INDUSTRY	759	19
OTHER PRIVATE	379	9
TOTAL	4067	100

Figure 3.--Ownership of commercial forest land, 1956.

Area of forest owned by wood-using industries has increased 51 percent since 1940. Farm and other private ownership figures for the 1940 and 1956 Forest Surveys cannot be compared because of differences in sources of data and in definitions used. An analysis of Census of Agriculture figures shows a 6.5-percent reduction in farm woodland area between 1939 and 1954.

Area of pine types decreased 8 percent.--Comparisons made using the 1940 forest type definitions show a drop of 185,000 acres or 8 percent in pine and mixed pine-hardwood types during the period between surveys. This trend to hardwood types resulted partly from the preferred use of the pines, and also from the steady buildup of hardwood stocking in all tree-size classes. The increased proportion of hardwoods in forest stands would cause some shifts from pine to hardwood forest types even in stands where the pine component remained unchanged. Pine type area decreases were 124,000 acres for loblolly pine, 34,000 acres for Virginia pine, and 27,000 acres for shortleaf pine (fig. 4). Since 1940 the proportion of pine types has dropped from 62 percent to 55 percent of the commercial forest area in the Coastal Plain.

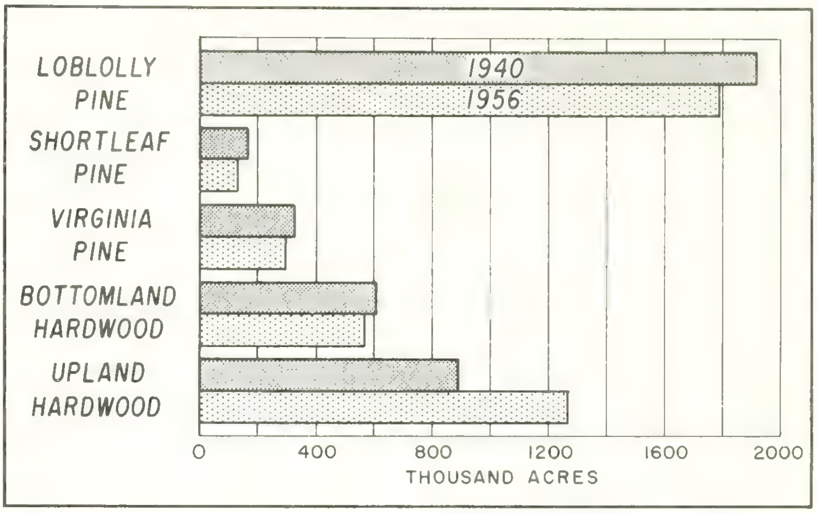


Figure 4.--Comparison of the 1940 and 1956 commercial forest area by forest type. Pine-hardwood types are included with the pine types.

Pine sawtimber volume holding steady.--The board-foot volume of pine timber dropped only 2 percent in the past 16 years (table A), but there is now a larger proportion of the volume in the smaller trees. The volume in pines 15.0 inches d.b.h. or larger dropped 17 percent, as compared to an increase of 7 percent in the smaller sawtimber trees.

Table A.--Comparison of sawtimber volumes, 1940 and 1956

Species group	1940[1]	1956	Change	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Yellow pines	7,536	7,398	-138	-2
Other softwoods	337	255	-82	-24
Soft hardwoods	2,936	3,182	+246	+8
Hard hardwoods	2,671	4,265	+1,594	+60
All species	13,480	15,100	+1,620	+12

[1] Original survey volumes have been recomputed to eliminate differences resulting from changes in standards between the two surveys. Thus, the 1940 estimate shown here will not agree with volumes previously published.

During the period between Forest Surveys, hardwood sawtimber volumes increased in all sizes for an overall rise of 33 percent. A closer examination reveals that the volume of the more preferred soft hardwood group dropped more than one-third in the diameters above 20 inches, while hard hardwoods of similar size increased sharply.

Total growing stock increased 14 percent.--Cubic-foot volume of sound trees 5.0 inches d.b.h. or larger increased 14 percent since 1940 (table B). Pines remained constant, while the small component of cedar and cypress dropped 28 percent, netting a one-percent decrease for all softwoods. Hardwood cubic volume jumped 33 percent during the 16 years.

Table B.--Comparison of volumes in all trees 5.0 inches d.b.h. or larger, 1940 and 1956

Class of material and species group	1940[1]	1956	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Growing stock:				
Yellow pines	2,180	2,185	+5	([2])
Other softwoods	75	54	-21	-28
Soft hardwoods	918	1,076	+158	+17
Hard hardwoods	959	1,414	+455	+47
All species	4,132	4,729	+597	+14
Cull trees:				
Softwoods	63	71	+8	+13
Hardwoods	360	323	-37	-10
All species	423	394	-29	-7
All live trees	4,555	5,123	+568	+12

[1] See footnote 1, table A.

[2] Less than 0.5 percent change.

As shown in figure 5, hardwood growing stock volume made a spectacular increase in the smaller diameters, but changed little in the large diameters. A slight gain in the volume of smaller softwood trees was about balanced by a drop in the volume of larger trees.

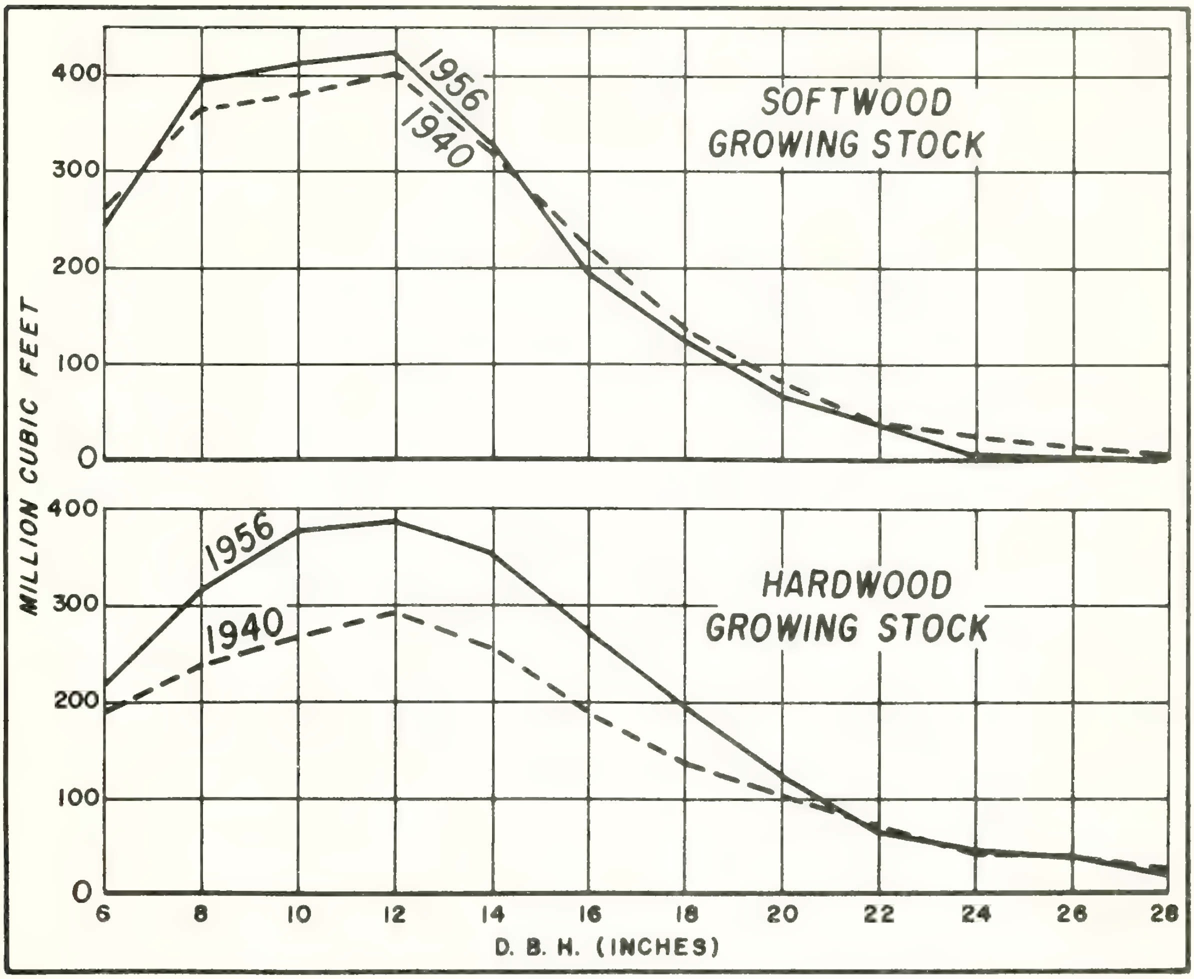


Figure 5.--Comparison of 1940 and 1956 growing stock volume by tree diameter.

A start has been made in reducing cull-tree volume.--Cubic volume of cull trees has dropped 7 percent since 1940, as indicated in table B. The decrease is in the hardwoods and is greatest in the smaller diameters. It seems probable that the recent widespread cultural operations on larger private holdings have already created a measurable effect. Pulp and paper companies and a few other large forest owners have cut, bulldozed, girdled, or poisoned large areas of inferior hardwoods in an effort to reestablish pine stands either through planting or natural reseeding.

In spite of the small decrease in cull volume, about 8 percent of the total cubic volume is still in cull trees. About nine-tenths of this volume is in trees classified as sound culls. These trees are considered unsuitable for saw logs, mainly because of roughness, but much of their volume could be used for pulpwood or other products not requiring straight or clear sections.

Net growth of pine sawtimber is over one-half billion board-feet.--The net annual growth of sawtimber in the Virginia Coastal Plain was estimated at 836 million board-feet for 1956 (table 18). Pine accounted for 514 million board-feet, or a little over 60 percent of the total. The rate of net growth on sawtimber was about 7 percent for pines, 2 percent for other softwoods, 4.5 percent for soft hardwoods, and 4 percent for hard hardwoods (table 19).

Hard hardwood increase held in check.--Sawtimber volume increased during 1956 in each species group except the hard hardwoods (table 21). In that category, timber cut almost equaled growth, and volume dropped in the amount of natural mortality. Total growing stock in each species group also increased but, here again, hard hardwoods were at the bottom of the list. This seems odd in view of the large increases in hard hardwood volume and area of upland hardwood type since 1940. The explanation is found in recent cultural operations aimed at reestablishing pine stands in areas occupied partially or entirely by low-value hardwoods. These cutting, poisoning, girdling, and bulldozing operations were started only recently but have already covered a considerable area in the Virginia Coastal Plain.

Table 1.--Gross area[1] by broad use class, 1956

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	4,067.1	59.2
Noncommercial:		
Productive-reserved	15.5	0.2
Unproductive	33.4	0.5
Total forest	4,116.0	59.9
Nonforest land:		
Agriculture	1,597.8	23.3
Marsh	229.5	3.3
Urban and other[2]	345.4	5.0
Total nonforest	2,172.7	31.6
Total land area	6,288.7	91.5
Total water area[3]	580.4	8.5
All classes	6,869.1	100.0

1/ From U. S. Bureau of the Census, 1950.

2/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

3/ Includes 503,800 acres of Census water reported in 1950 or created since that date and 76,600 acres of water according to Survey standards but defined by the Bureau of Census as land area. The Census water area was adjusted to exclude 3,200 acres classified as land by the Forest Survey.

Table 2.--Ownership of commercial forest land, 1956

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	--	--
Indian	--	--
Other Federal	87.0	2.2
Total Federal	87.0	2.2
State	16.2	0.4
County and municipal	12.8	0.3
Total public	116.0	2.9
Private land:		
Farm	2,813.2	69.2
Wood-using industries	758.6	18.6
Other	379.3	9.3
Total private	3,951.1	97.1
All classes	4,067.1	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1956

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine[2]	228.6	793.1	414.4	90.6	20.0	1,546.7
Shortleaf pine	14.9	53.8	37.8	3.7	--	110.2
Virginia pine	7.3	70.4	102.7	17.6	--	198.0
Total	250.8	917.3	554.9	111.9	20.0	1,854.9
Hardwood types:						
Oak-pine	86.0	207.8	128.0	39.4	3.0	464.2
Oak-hickory	341.0	371.8	390.2	81.0	16.7	1,200.7
Oak-gum-cypress	247.3	145.2	96.6	46.1	12.1	547.3
Total	674.3	724.8	614.8	166.5	31.8	2,212.2
All types	925.1	1,642.1	1,169.7	278.4	51.8	4,067.1
Percent	22.7	40.4	28.8	6.8	1.3	100.0

[1] See description of forest type and stand-size classes under "Definition of Terms."

[2] Includes 22,100 acres of pond pine type.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, 1956

(In million board-feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine[3]	1,720.9	4,327.0	279.1	17.8	6.8	6,351.6
Shortleaf pine	120.4	420.3	38.6	2.7	--	582.0
Virginia pine	69.7	334.5	58.7	--	1.3	464.2
Total	1,911.0	5,081.8	376.4	20.5	8.1	7,397.8
Cypress	180.7	46.3	1.1	--	--	228.1
Redcedar	6.5	10.2	2.1	--	--	18.8
Whitecedar	--	8.6	--	--	--	8.6
Total sftwds.	2,098.2	5,146.9	379.6	20.5	8.1	7,653.3
Hardwoods:						
Blackgum	513.1	201.2	26.9	0.8	--	742.0
Sweetgum	623.3	403.0	59.4	11.6	2.1	1,099.4
Yellow-poplar	333.4	258.4	55.4	2.1	4.4	653.7
Soft maple	321.3	147.5	10.2	1.6	--	480.6
Other soft hdwds.	163.7	35.4	6.3	--	0.6	206.0
Total	1,954.8	1,045.5	158.2	16.1	7.1	3,181.7
White & swamp chestnut oaks	476.3	529.4	87.2	1.9	1.0	1,095.8
Other white oaks	100.9	98.8	11.2	--	--	210.9
No. red & swamp red oaks	168.2	116.1	9.4	--	--	293.7
Other red oaks	759.8	579.7	130.8	4.8	--	1,475.1
Hickory	275.5	212.4	42.3	1.7	--	531.9
Ash	63.1	35.9	3.4	--	--	102.4
Beech	303.9	65.6	21.2	--	--	390.7
Other hard hdwds.	104.8	46.8	10.7	0.3	1.8	164.4
Total	2,252.5	1,684.7	316.2	8.7	2.8	4,264.9
Total hdwds.	4,207.3	2,730.2	474.4	24.8	9.9	7,446.6
All species	6,305.5	7,877.1	854.0	45.3	18.0	15,099.9
Percent	41.8	52.2	5.6	0.3	0.1	100.0

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[1] Log scale, International 1/4-inch rule.

[2] See "Definition of Terms" for species combined with others.

[3] Includes 73.2 million board-feet of pond pine.

Table 5.--Net volume[1] of sawtimber by species and diameter class, 1956

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Loblolly pine	2,934.5	2,825.7	557.4	34.0	6,351.6	42.1
Shortleaf pine	378.6	187.0	16.4	--	582.0	3.8
Virginia pine	310.5	144.4	9.3	--	464.2	3.1
Total	3,623.6	3,157.1	583.1	34.0	7,397.8	49.0
Cypress	51.8	117.5	29.8	29.0	228.1	1.5
Redcedar	10.0	5.7	3.1	--	18.8	0.1
Whitecedar	1.4	7.2	--	--	8.6	0.1
Total sftwds.	3,686.8	3,287.5	616.0	63.0	7,653.3	50.7
Hardwoods:						
Blackgum	159.9	429.3	102.1	50.7	742.0	4.9
Sweetgum	296.3	629.0	159.4	14.7	1,099.4	7.3
Yellow-poplar	138.5	371.7	95.3	48.2	653.7	4.3
Soft maple	94.8	259.5	106.9	19.4	480.6	3.2
Other soft hdwds.	34.7	93.1	51.8	26.4	206.0	1.4
Total	724.2	1,782.6	515.5	159.4	3,181.7	21.1
White & swamp chestnut oaks	318.4	572.7	142.9	61.8	1,095.8	7.2
Other white oaks	55.8	76.4	32.3	46.4	210.9	1.4
No. red & swamp red oaks	46.0	141.7	36.6	69.4	293.7	1.9
Other red oaks	260.2	722.6	224.2	268.1	1,475.1	9.8
Hickory	86.7	270.3	96.9	78.0	531.9	3.5
Ash	25.7	62.7	14.0	--	102.4	0.7
Beech	38.8	196.1	91.3	64.5	390.7	2.6
Other hard hdwds.	43.4	62.7	50.8	7.5	164.4	1.1
Total	875.0	2,105.2	689.0	595.7	4,264.9	28.2
Total hdwds.	1,599.2	3,887.8	1,204.5	755.1	7,446.6	49.3
All species	5,286.0	7,175.3	1,820.5	818.1	15,099.9	100.0
Percent	35.0	47.5	12.1	5.4	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1956

(In million board-feet)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	1,659.8	4,602.3	254.1	13.0	7.4	6,536.6
Shortleaf pine	100.9	285.5	22.0	--	--	408.4
Virginia pine	39.1	275.2	62.6	--	--	376.9
Total	1,799.8	5,163.0	338.7	13.0	7.4	7,321.9
Hardwood types:						
Oak-pine	596.0	779.0	91.9	10.0	--	1,476.9
Oak-hickory	2,128.5	1,330.6	359.6	17.1	6.8	3,842.6
Oak-gum-cypress	1,781.2	604.5	63.8	5.2	3.8	2,458.5
Total	4,505.7	2,714.1	515.3	32.3	10.6	7,778.0
All types	6,305.5	7,877.1	854.0	45.3	18.0	15,099.9
Percent	41.8	52.2	5.6	0.3	0.1	100.0

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, 1956

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd.-ft.	Percent	Million bd.-ft.	Percent	Million bd.-ft.	Percent
PINE						
Grade 1	--	--	89.6	4.1	89.6	1.2
Grade 2	1,125.7	21.6	883.2	40.4	2,008.9	27.2
Grade 3	2,949.8	56.6	741.1	33.9	3,690.9	49.9
Grade 4	1,136.2	21.8	472.2	21.6	1,608.4	21.7
Total	5,211.7	100.0	2,186.1	100.0	7,397.8	100.0
OTHER SOFTWOODS						
Grade 1	--	--	24.4	16.7	24.4	9.6
Grade 2	65.3	59.6	92.4	63.3	157.7	61.7
Grade 3	44.2	40.4	10.2	7.0	54.4	21.3
Grade 4	--	--	19.0	13.0	19.0	7.4
Total	109.5	100.0	146.0	100.0	255.5	100.0
SOFT HARDWOODS						
Grade 1	--	--	436.5	24.7	436.5	13.7
Grade 2	161.3	11.4	448.8	25.4	610.1	19.2
Grade 3	686.1	48.5	567.2	32.1	1,253.3	39.4
Grade 4	567.3	40.1	314.5	17.8	881.8	27.7
Total	1,414.7	100.0	1,767.0	100.0	3,181.7	100.0
HARD HARDWOODS						
Grade 1	--	--	335.3	13.6	335.3	7.9
Grade 2	30.6	1.7	530.0	21.5	560.6	13.1
Grade 3	315.0	17.5	621.2	25.2	936.2	22.0
Grade 4	1,454.2	80.8	978.6	39.7	2,432.8	57.0
Total	1,799.8	100.0	2,465.1	100.0	4,264.9	100.0

[1] Ten-inch hardwoods not included since they are below sawtimber size.

Table 8.--Net volume[1] of all timber by species and stand-size class, 1956

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine[2]	4,523	15,758	3,687	109	27	24,104
Shortleaf pine	408	1,780	522	6	--	2,716
Virginia pine	216	1,715	1,075	4	4	3,014
Total	5,147	19,253	5,284	119	31	29,834
Cypress	386	147	3	--	--	536
Redcedar	27	35	6	--	--	68
Whitecedar	--	18	7	--	--	25
Total sftwds.	5,560	19,453	5,300	119	31	30,463
Hardwoods:						
Blackgum	1,922	1,206	185	13	--	3,326
Sweetgum	2,288	2,355	771	42	6	5,462
Yellow-poplar	953	1,065	476	6	12	2,512
Soft maple	1,324	852	212	21	--	2,409
Other soft hdwds.	519	230	156	--	2	907
Total	7,006	5,708	1,800	82	20	14,616
White & swamp chestnut oaks	1,828	3,001	996	6	3	5,834
Other white oaks	271	529	150	--	6	956
No. red & swamp red oaks	468	430	144	--	--	1,042
Other red oaks	2,272	2,622	1,037	42	--	5,973
Hickory	844	1,013	211	4	--	2,072
Ash	288	158	49	--	--	495
Beech	883	390	132	--	7	1,412
Dogwood, holly	162	231	84	1	--	478
Other hard hdwds.	388	227	204	--	13	832
Total	7,404	8,601	3,007	53	29	19,094
Total hdwds.	14,410	14,309	4,807	135	49	33,710
All species	19,970	33,762	10,107	254	80	64,173
Percent	31.1	52.6	15.8	0.4	0.1	100.0

OTHER MATERIAL

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Sound culls:						
Softwoods	188	390	302	46	3	929
Hardwoods	1,456	1,467	880	125	99	4,027
Rotten culls	193	160	63	20	--	436
Total other material	1,837	2,017	1,245	191	102	5,392

1/ Sound wood and bark.

2/ Includes 192,000 cords of pond pine.

Table 9.--Net volume[1] of all timber by species and diameter class, 1956

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	2,972	4,197	4,142	4,587	6,910	1,296	24,104
Shortleaf pine	446	690	630	489	427	34	2,716
Virginia pine	685	910	682	347	369	21	3,014
Total	4,103	5,797	5,454	5,423	7,706	1,351	29,834
Cypress	--	59	56	78	240	103	536
Redcedar	10	12	10	16	13	7	68
Whitecedar	7	--	--	3	15	--	25
Total sftwds.	4,120	5,868	5,520	5,520	7,974	1,461	30,463
Hardwoods:							
Blackgum	301	460	544	521	1,160	340	3,326
Sweetgum	597	980	1,000	891	1,603	391	5,462
Yellow-poplar	241	327	268	412	947	317	2,512
Soft maple	372	380	317	303	730	307	2,409
Other soft hdwds.	128	137	122	108	241	171	907
Total	1,639	2,284	2,251	2,235	4,681	1,526	14,616
White & swamp chestnut oaks	763	854	1,112	1,014	1,582	509	5,834
Other white oaks	106	131	129	180	215	195	956
No. red & swamp red oaks	34	151	99	144	378	236	1,042
Other red oaks	555	674	894	799	1,893	1,158	5,973
Hickory	196	266	203	277	728	402	2,072
Ash	85	48	91	80	160	31	495
Beech	112	70	198	121	544	367	1,412
Dogwood, holly	144	119	105	45	65	--	478
Other hard hdwds.	147	182	147	100	114	142	832
Total	2,142	2,495	2,978	2,760	5,679	3,040	19,094
Total hdwds.	3,781	4,779	5,229	4,995	10,360	4,566	33,710
All species	7,901	10,647	10,749	10,515	18,334	6,027	64,173
Percent	12.3	16.6	16.7	16.4	28.6	9.4	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	146	164	186	175	162	96	929
Hardwoods	601	726	510	451	895	844	4,027
Rotten culls	47	64	62	18	69	176	436
Total other material	794	954	758	644	1,126	1,116	5,392

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[1] Sound wood and bark.

Table 10.--Net volume[1] of all timber by species and class of material, 1956

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	13,670	3,265	7,169	24,104	424	34
Shortleaf pine	1,239	341	1,136	2,716	14	--
Virginia pine	1,070	349	1,595	3,014	417	3
Total	15,979	3,955	9,900	29,834	855	37
Cypress	390	87	59	536	74	21
Redcedar	37	9	22	68	--	--
Whitecedar	15	3	7	25	--	--
Total sftwds.	16,421	4,054	9,988	30,463	929	58
Hardwoods:						
Blackgum	1,522	499	1,305	3,326	657	78
Sweetgum	2,280	605	2,577	5,462	387	50
Yellow-poplar	1,343	333	836	2,512	128	30
Soft maple	976	364	1,069	2,409	772	66
Other soft hdwds.	414	106	387	907	115	2
Total	6,535	1,907	6,174	14,616	2,059	226
White & swamp chestnut oaks	2,188	917	2,729	5,834	347	33
Other white oaks	401	189	366	956	219	10
No. red & swamp red oaks	585	173	284	1,042	44	--
Other red oaks	2,923	927	2,123	5,973	349	30
Hickory	1,079	328	665	2,072	115	15
Ash	221	50	224	495	73	14
Beech	762	270	380	1,412	295	23
Dogwood, holly	78	32	368	478	93	--
Scrub oak[2]	--	--	--	--	254	2
Other hard hdwds.	268	88	476	832	179	25
Total	8,505	2,974	7,615	19,094	1,968	152
Total hdwds.	15,040	4,881	13,789	33,710	4,027	378
All species	31,461	8,935	23,777	64,173	4,956	436
Percent	49.0	13.9	37.1	100.0	91.9	8.1

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, 1956

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	5,071	18,352	3,881	72	35	27,411
Shortleaf pine	337	1,195	305	--	--	1,837
Virginia pine	129	1,478	1,208	26	--	2,841
Total	5,537	21,025	5,394	98	35	32,089
Hardwood types:						
Oak-pine	1,869	3,559	822	50	--	6,300
Oak-hickory	6,692	6,371	2,981	68	27	16,139
Oak-gum-cypress	5,872	2,807	910	38	18	9,645
Total	14,433	12,737	4,713	156	45	32,084
All types	19,970	33,762	10,107	254	80	64,173
Percent	31.1	52.6	15.8	0.4	0.1	100.0

OTHER MATERIAL

Softwood types:						
Loblolly pine	299	606	313	56	3	1,277
Shortleaf pine	--	11	21	--	--	32
Virginia pine	14	110	112	6	--	242
Total	313	727	446	62	3	1,551
Hardwood types:						
Oak-pine	150	227	116	13	--	506
Oak-hickory	529	528	504	107	90	1,758
Oak-gum-cypress	845	535	179	9	9	1,577
Total	1,524	1,290	799	129	99	3,841
All types	1,837	2,017	1,245	191	102	5,392
Percent	34.1	37.4	23.1	3.5	1.9	100.0

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[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1956

(In million cubic feet)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine[2]	175.5	279.7	316.5	352.0	556.6	109.1	1,789.4
Shortleaf pine	25.9	46.3	42.8	37.2	34.4	2.9	189.5
Virginia pine	41.3	61.5	46.3	26.0	29.2	1.7	206.0
Total	242.7	387.5	405.6	415.2	620.2	113.7	2,184.9
Cypress	--	4.3	4.0	6.7	21.1	10.0	46.1
Redcedar	0.7	0.9	0.8	1.3	1.2	0.6	5.5
Whitecedar	0.4	--	--	0.3	1.4	--	2.1
Total sftwds.	243.8	392.7	410.4	423.5	643.9	124.3	2,238.6
Hardwoods:							
Blackgum	17.1	30.5	39.3	41.3	92.7	28.2	249.1
Sweetgum	34.2	64.9	71.8	67.2	126.4	32.3	396.8
Yellow-poplar	14.1	21.8	19.3	31.4	74.4	26.4	187.4
Soft maple	21.0	25.2	22.8	23.3	57.8	25.2	175.3
Other soft hdwds.	7.5	9.1	8.7	8.4	19.3	14.3	67.3
Total	93.9	151.5	161.9	171.6	370.6	126.4	1,075.9
White & swamp chestnut oaks	43.5	56.1	80.1	78.3	124.8	42.0	424.8
Other white oaks	6.0	8.6	9.3	13.8	16.6	16.0	70.3
No. red & swamp red oaks	1.9	9.8	7.1	11.0	30.0	19.5	79.3
Other red oaks	32.1	44.2	64.6	63.0	149.3	95.9	449.1
Hickory	11.1	17.5	14.5	20.7	57.0	33.2	154.0
Ash	4.9	3.1	6.6	6.3	12.7	2.5	36.1
Beech	6.4	4.5	14.3	9.5	42.9	30.8	108.4
Dogwood, holly	8.5	7.7	7.6	3.2	5.0	--	32.0
Other hard hdwds.	8.6	12.0	10.6	8.0	9.2	11.7	60.1
Total	123.0	163.5	214.7	213.8	447.5	251.6	1,414.1
Total hdwds.	216.9	315.0	376.6	385.4	818.1	378.0	2,490.0
All species	460.7	707.7	787.0	808.9	1,462.0	502.3	4,728.6
Percent	9.7	15.0	16.7	17.1	30.9	10.6	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	8.4	11.0	12.2	12.6	12.9	9.0	66.1
Hardwoods	34.3	48.0	36.7	34.9	71.6	70.1	295.6
Rotten culls	2.7	4.2	4.5	1.1	5.8	14.8	33.1
Total other material	45.4	63.2	53.4	48.6	90.3	93.9	394.8

[1] Excluding bark.

[2] Includes 14.7 million cubic feet of pond pine.

Table 13.--Net volume[1] of all timber by species and class of material, 1956

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	1,064.2	270.0	455.2	1,789.4	30.0	2.7
Shortleaf pine	98.1	19.2	72.2	189.5	0.8	--
Virginia pine	83.6	19.6	102.8	206.0	28.2	0.2
Total	1,245.9	308.8	630.2	2,184.9	59.0	2.9
Cypress	35.0	6.8	4.3	46.1	7.1	2.1
Redcedar	3.0	0.9	1.6	5.5	--	--
Whitecedar	1.4	0.3	0.4	2.1	--	--
Total sftwds.	1,285.3	316.8	636.5	2,238.6	66.1	5.0
Hardwoods:						
Blackgum	124.6	37.6	86.9	249.1	47.9	6.1
Sweetgum	185.0	40.9	170.9	396.8	28.1	3.7
Yellow-poplar	108.2	24.0	55.2	187.4	10.2	2.2
Soft maple	78.9	27.4	69.0	175.3	56.9	4.9
Other soft hdwds.	33.0	9.0	25.3	67.3	8.5	0.2
Total	529.7	138.9	407.3	1,075.9	151.6	17.1
White & swamp chestnut oaks	175.7	69.4	179.7	424.8	26.4	2.3
Other white oaks	33.2	13.2	23.9	70.3	16.7	0.8
No. red & swamp red oaks	46.9	13.6	18.8	79.3	3.3	--
Other red oaks	235.0	73.2	140.9	449.1	24.9	1.9
Hickory	85.5	25.4	43.1	154.0	8.7	1.4
Ash	17.4	4.1	14.6	36.1	5.4	0.9
Beech	62.2	21.0	25.2	108.4	23.3	1.6
Dogwood, holly	5.7	2.5	23.8	32.0	5.9	--
Scrub oak[2]	--	--	--	--	17.3	0.2
Other hard hdwds.	21.5	7.4	31.2	60.1	12.1	1.9
Total	683.1	229.8	501.2	1,414.1	144.0	11.0
Total hdwds.	1,212.8	368.7	908.5	2,490.0	295.6	28.1
All species	2,498.1	685.5	1,545.0	4,728.6	361.7	33.1
Percent	52.8	14.5	32.7	100.0	91.6	8.4

[1] Excluding bark.

[2] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, 1956

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Loblolly pine					
Softwood	6,079	5,275	536	156	3,758
Hardwood	1,182	528	78	29	468
Shortleaf pine					
Softwood	5,891	4,848	533	--	3,347
Hardwood	887	454	49	--	358
Virginia pine					
Softwood	4,176	3,020	523	--	1,500
Hardwood	1,116	889	87	--	403
Oak-pine					
Softwood	2,738	1,562	364	116	1,317
Hardwood	4,197	2,186	354	121	1,865
Oak-hickory					
Softwood	372	245	85	45	213
Hardwood	5,869	3,334	837	199	2,987
Oak-gum-cypress					
Softwood	921	507	42	36	562
Hardwood	6,283	3,657	618	119	3,931
All types					
Softwood	2,268	3,134	325	87	1,882
Hardwood	4,548	1,663	406	105	1,831

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1956

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees
Loblolly pine										
Softwood	16.0	0.4	19.4	0.3	8.4	0.5	0.7	0.3	14.6	0.4
Hardwood	6.2	0.9	3.8	0.4	1.0	0.3	0.2	0.2	3.1	0.4
Shortleaf pine										
Softwood	18.6	--	18.5	0.1	6.6	0.4	--	--	13.8	0.2
Hardwood	4.1	--	3.7	0.1	1.5	0.2	--	--	2.8	0.1
Virginia pine										
Softwood	11.0	0.7	16.2	1.0	10.1	0.7	0.6	--	11.4	0.8
Hardwood	6.5	1.2	4.8	0.5	1.7	0.4	0.9	0.3	2.9	0.5
Oak-pine										
Softwood	6.9	0.1	6.1	0.1	2.3	(2/)	0.9	0.2	4.7	0.1
Hardwood	14.9	1.6	11.0	1.0	4.2	0.9	0.3	0.1	8.8	1.0
Oak-hickory										
Softwood	1.2	0.1	1.2	(2/)	0.6	(2/)	0.1	(2/)	0.9	(2/)
Hardwood	18.4	1.5	15.9	1.4	7.1	1.3	0.8	2.0	12.5	1.4
Oak-gum-cypress										
Softwood	2.2	0.4	1.5	0.1	0.4	--	0.2	--	1.5	0.2
Hardwood	21.6	3.0	17.8	3.6	9.0	1.9	0.8	0.3	16.1	2.7
All types										
Softwood	6.0	0.3	11.8	0.2	4.5	0.3	0.5	0.1	7.5	0.2
Hardwood	15.6	1.7	8.7	1.0	4.1	0.8	0.6	0.7	8.3	1.1

1/ Sound wood and bark.

2/ Less than 0.05 cord per acre.

Table 16.--Number of trees[1] by species group, quality class, and tree size, 1956

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	426,181	187,980	74,935	8,576	697,672
Sound culls	29,848	8,886	3,070	356	42,160
Rotten culls	--	348	60	57	465
Total	456,029	197,214	78,065	8,989	740,297
Other softwoods:					
Sound trees	35,845	1,355	1,124	422	38,746
Sound culls	5,941	172	--	18	6,131
Rotten culls	--	--	--	18	18
Total	41,786	1,527	1,124	458	44,895
Soft hardwoods:					
Sound trees	574,297	92,195	17,228	7,728	691,448
Sound culls	191,182	19,484	2,772	1,439	214,877
Rotten culls	--	2,065	333	513	2,911
Total	765,479	113,744	20,333	9,680	909,236
Hard hardwoods:					
Sound trees	608,389	115,606	23,526	10,172	757,693
Sound culls	302,625	26,024	2,610	1,351	332,610
Rotten culls	--	2,083	169	306	2,558
Total	911,014	143,713	26,305	11,829	1,092,861
All species	2,174,308	456,198	125,827	30,956	2,787,289

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[1] All trees 1.0 inch d.b.h. and larger.

Table 17.--Stocking on commercial forest land by forest type and tree-size class, 1956

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	13.3	29.2	129.7	1,374.5	1,546.7
Shortleaf pine	--	3.7	7.4	99.1	110.2
Virginia pine	--	3.7	21.2	173.1	198.0
Oak-pine	3.0	14.2	42.8	404.2	464.2
Oak-hickory	8.6	74.6	252.9	864.6	1,200.7
Oak-gum-cypress	8.7	35.3	103.1	400.2	547.3
All types	33.6	160.7	557.1	3,315.7	4,067.1
Percent	0.8	4.0	13.7	81.5	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	336.3	504.2	357.3	348.9	1,546.7
Shortleaf pine	24.2	47.2	15.0	23.8	110.2
Virginia pine	67.2	90.8	36.2	3.8	198.0
Oak-pine	105.5	202.3	122.9	33.5	464.2
Oak-hickory	271.8	602.8	242.0	84.1	1,200.7
Oak-gum-cypress	101.8	210.6	126.9	108.0	547.3
All types	906.8	1,657.9	900.3	602.1	4,067.1
Percent	22.3	40.8	22.1	14.8	100.0

Table 18.--Net annual growth by species group and unit of measure, 1956

Species group	Sawtimber	Growing stock	
	Million bd.-ft.	Million cu. ft.	Thousand cords
Yellow pines	513.6	128.6	1,904
Other softwoods	4.6	0.9	13
Soft hardwoods	142.7	45.9	673
Hard hardwoods	174.9	52.2	761
All species	835.8	227.6	3,351

Table 19.--Net annual growth percentages for each species group and unit of measure, 1956

Unit of measure	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	6.94	1.79	4.48	4.10	5.54
Cubic feet	5.88	1.76	4.27	3.69	4.81
Standard cords	6.38	2.07	4.60	3.99	5.22

Table 20.--Average annual timber cut by tree-size class and species group

Tree-size class	Softwoods		Soft hardwoods	Hard hardwoods	All species
	Pine	Other			
SAWTIMBER (In million board-feet)					
Small sawtimber	268.7	--	18.1	53.1	339.9
Large sawtimber	189.2	2.8	62.0	144.3	398.3
All trees	457.9	2.8	80.1	197.4	738.2
GROWING STOCK (In thousand cords)					
Pole trees	347	1	58	78	484
Small sawtimber	800	--	61	169	1,030
Large sawtimber	410	5	149	354	918
All trees	1,557	6	268	601	2,432
GROWING STOCK (In million cubic feet)					
Pole trees	18.6	0.1	3.6	4.8	27.1
Small sawtimber	59.2	--	4.6	12.9	76.7
Large sawtimber	34.3	0.4	12.2	28.9	75.8
All trees	112.1	0.5	20.4	46.6	179.6

Table 21.--Net annual change in volume by species group, 1956

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
SAWTIMBER (In million board-feet)					
Net volume, Jan. 1, 1956	7,397.8	255.5	3,181.7	4,264.9	15,099.9
Total growth	558.0	6.1	157.6	198.4	920.1
Mortality	44.4	1.5	14.9	23.5	84.3
Net growth	513.6	4.6	142.7	174.9	835.8
Timber cut	457.9	2.8	80.1	197.4	738.2
Loss or gain	+55.7	+1.8	+62.6	-22.5	+97.6
Net volume, Dec. 31, 1956	7,453.5	257.3	3,244.3	4,242.4	15,197.5
Percent change	+0.8	+0.7	+2.0	-0.5	+0.6
GROWING STOCK (In thousand cords)					
Net volume, Jan. 1, 1956	29,834	629	14,616	19,094	64,173
Total growth	2,112	17	747	849	3,725
Mortality	208	4	74	88	374
Net growth	1,904	13	673	761	3,351
Timber cut	1,557	6	268	601	2,432
Loss or gain	+347	+7	+405	+160	+919
Net volume, Dec. 31, 1956	30,181	636	15,021	19,254	65,092
Percent change	+1.2	+1.1	+2.8	+0.8	+1.4
GROWING STOCK (In million cubic feet)					
Net volume, Jan. 1, 1956	2,184.9	53.7	1,075.9	1,414.1	4,728.6
Total growth	143.7	1.2	51.3	58.9	255.1
Mortality	15.1	0.3	5.4	6.7	27.5
Net growth	128.6	0.9	45.9	52.2	227.6
Timber cut	112.1	0.5	20.4	46.6	179.6
Loss or gain	+16.5	+0.4	+25.5	+5.6	+48.0
Net volume, Dec. 31, 1956	2,201.4	54.1	1,101.4	1,419.7	4,776.6
Percent change	+0.8	+0.7	+2.4	+0.4	+1.0

Table 22.--Average annual change in volume per acre by stand size and forest type, 195

Stand size and forest type	Sawtimber (in board-feet)				Growing stock (in standard cords			
	Growth	Mortality	Timber cut[1]	Net change	Growth	Mortality	Timber cut[1]	Net chang
Sawtimber stands								
Yellow pine	421	25	356	40	1.30	0.13	1.17	0.0
Oak-pine	257	38	253	-34	.90	.11	.74	.0
Oak-hickory	223	43	201	-21	.74	.15	.54	.0
Oak-gum-cypress	233	36	53	144	.83	.12	.12	.5
All types	319	33	255	31	1.03	.13	.78	.1
Poletimber stands								
Yellow pine	81	3	15	63	1.22	.03	.20	.9
Oak-pine	90	25	--	65	.58	.07	--	.5
Oak-hickory	76	7	21	48	.48	.04	.08	.3
Oak-gum-cypress	80	16	--	64	.80	.10	--	.7
All types	80	9	14	57	.87	.05	.12	.7
Other stands								
Yellow pine	9	15	7	-13	.08	.06	.02	.0
Oak-pine	13	10	--	3	.13	.03	--	.1
Oak-hickory	9	4	--	5	.06	.06	--	.0
Oak-gum-cypress	8	9	--	-1	.13	.06	--	.0
All types	9	10	3	-4	.09	.05	.01	.0
All stands								
Yellow pine	290	16	229	45	1.19	.08	.79	.3
Oak-pine	189	26	160	3	.74	.08	.47	.1
Oak-hickory	158	22	126	10	.60	.09	.35	.1
Oak-gum-cypress	182	25	38	119	.75	.10	.09	.5
All types	225	21	165	39	.91	.09	.53	.2

[1] Excludes timber removed in clearing land.

Table 23.--County area by broad use class, 1956

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Accomack	385.3	179.5	94.5	([2])	111.3	38.3
Brunswick	370.6	103.1	0.7	--	266.8	72.1
Caroline	351.4	74.1	3.5	25.0	248.8	71.5
Charles City	130.6	29.1	14.2	--	87.3	75.0
Chesterfield	303.4	67.9	8.1	2.0	225.4	76.3
Dinwiddie	324.5	91.6	0.3	4.6	228.0	70.3
Essex	169.0	53.5	10.0	--	105.5	66.4
Gloucester	164.5	44.1	24.3	([2])	96.1	68.5
Greensville	193.3	52.7	1.2	([2])	139.4	72.6
Hanover	301.4	91.3	0.5	0.2	209.4	69.6
Henrico	149.8	67.8	2.6	0.5	78.9	53.6
Isle of Wight	230.4	84.3	26.7	0.2	119.2	58.5
James City	116.5	26.6	22.3	1.8	65.8	69.9
King and Queen	209.3	46.2	6.7	--	156.4	77.2
King George	117.1	38.7	4.1	--	74.3	65.8
King Williams	183.0	44.7	7.0	--	131.3	74.6
Lancaster	97.9	32.0	9.5	--	56.4	63.8
Mathews	67.2	22.7	15.0	--	29.5	56.5
Middlesex	88.3	28.9	5.6	--	53.8	65.1
Nansemond	273.9	90.0	20.0	0.8	163.1	64.2
New Kent	141.4	25.7	6.5	--	109.2	80.9
Norfolk	254.7	87.1	26.9	0.2	140.5	61.7
Northampton	228.5	101.1	89.3	--	38.1	27.4
Northumberland	142.7	46.1	21.6	--	75.0	61.9
Prince George	190.7	53.8	13.7	4.6	118.6	67.0
Princess Anne	207.4	100.0	42.9	3.6	60.9	37.0
Richmond	129.9	45.0	8.1	--	76.8	63.1
Southampton	388.5	132.7	1.1	--	254.7	65.7
Surry	195.8	43.7	16.9	--	135.2	75.6
Sussex	317.4	66.7	0.6	--	250.1	78.9
Westmoreland	160.0	58.5	11.3	1.4	88.8	59.7
York[3]	215.0	81.4	57.1	4.0	72.5	45.9
Unit total	6,799.4	2,110.6	572.8	48.9	4,067.1	65.3

[1] Gross area from Bureau of the Census, 1950.

[2] Less than 50 acres.

[3] Includes area in the independent cities Hampton and Warwick.

Table 24.--Ownership of commercial forest land by county, 1956

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Accomack	108.9	97.8	--	2.4	--	--	2.4	2.2
Brunswick	257.5	96.5	--	5.7	3.5	0.1	9.3	3.5
Caroline	210.7	84.7	--	37.7	0.1	0.3	38.1	15.3
Charles City	87.2	99.9	--	(1/)	--	0.1	0.1	0.1
Chesterfield	218.7	97.0	--	0.9	5.8	--	6.7	3.0
Dinwiddie	219.3	96.2	--	8.4	0.3	--	8.7	3.8
Essex	105.5	100.0	--	--	--	--	--	--
Gloucester	96.1	100.0	--	--	--	--	--	--
Greensville	139.3	99.9	--	--	0.1	--	0.1	0.1
Hanover	208.2	99.4	--	--	1.2	(1/)	1.2	0.6
Henrico	77.9	98.7	--	--	--	1.0	1.0	1.3
Isle of Wight	119.2	100.0	--	--	--	(1/)	(1/)	--
James City	64.0	97.3	--	1.0	0.7	0.1	1.8	2.7
King and Queen	156.0	99.7	--	--	--	0.4	0.4	0.3
King George	73.4	98.8	--	0.9	--	--	0.9	1.2
King William	130.7	99.5	--	--	0.6	--	0.6	0.5
Lancaster	56.4	100.0	--	--	--	--	--	--
Mathews	29.5	100.0	--	--	--	--	--	--
Middlesex	53.8	100.0	--	--	--	--	--	--
Nansemond	161.4	99.0	--	0.1	--	1.6	1.7	1.0
New Kent	108.4	99.3	--	--	0.8	--	0.8	0.7
Norfolk	136.7	97.3	--	3.8	--	--	3.8	2.7
Northampton	37.8	99.2	--	0.3	--	--	0.3	0.8
Northumberland	75.0	100.0	--	--	--	--	--	--
Prince George	115.5	97.4	--	3.1	--	--	3.1	2.6
Princess Anne	58.2	95.6	--	1.6	0.9	0.2	2.7	4.4
Richmond	76.8	100.0	--	--	--	--	--	--
Southampton	252.8	99.3	--	--	1.9	--	1.9	0.7
Surry	135.2	100.0	--	--	--	--	--	--
Sussex	249.7	99.8	--	--	0.3	0.1	0.4	0.2
Westmoreland	88.8	100.0	--	--	--	--	--	--
York	42.5	58.6	--	21.1	(1/)	8.9	30.0	41.4
Unit total	3,951.1	97.1	--	87.0	16.2	12.8	116.0	2.9

1/ Less than 50 acres.

Table 25.--Net volume[1] of sawtimber by county and species group, 1956

(In million board-feet)

County	Softwoods[2]	Gum, yellow-poplar, and soft maple[3]	Oaks and other hard hardwoods	All species
Accomack	228.2	59.9	8.8	296.9
Brunswick	413.7	105.8	105.2	624.7
Caroline	341.4	211.3	267.5	820.2
Charles City	245.3	38.2	108.5	392.0
Chesterfield	423.2	91.3	274.4	788.9
Dinwiddie	513.2	95.0	204.3	812.5
Essex	177.4	56.9	101.5	335.8
Gloucester	242.1	136.2	171.5	549.8
Greensville	254.1	112.1	150.2	516.4
Hanover	289.0	264.0	279.4	832.4
Henrico	59.1	53.7	90.0	202.8
Isle of Wight	341.2	95.8	179.6	616.6
James City	70.3	37.7	119.7	227.7
King and Queen	255.8	65.4	201.6	522.8
King George	54.5	48.4	107.7	210.6
King William	272.1	66.9	171.1	510.1
Lancaster	75.2	24.1	43.8	143.1
Mathews	63.2	22.6	15.7	101.5
Middlesex	81.5	47.7	50.2	179.4
Nansemond	305.2	311.5	133.2	749.9
New Kent	130.7	103.7	134.7	369.1
Norfolk	193.7	158.5	88.6	440.8
Northampton	152.0	8.4	17.2	177.6
Northumberland	118.9	29.5	60.1	208.5
Prince George	199.0	43.8	115.0	357.8
Princess Anne	78.2	60.3	42.3	180.8
Richmond	71.7	57.6	102.2	231.5
Southampton	707.9	352.3	263.3	1,323.5
Surry	330.5	83.3	137.9	551.7
Sussex	667.5	208.0	285.8	1,161.3
Westmoreland	81.5	41.7	119.7	242.9
York	216.0	90.1	114.2	420.3
Unit total	7,653.3	3,181.7	4,264.9	15,099.9

[1] Log scale, International 1/4-inch rule.

[2] Includes cypress and cedar.

[3] Includes other soft hardwoods.

Table 26.--Net volume[1] of sawtimber by county, broad species group, and diameter group, 1956

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Accomack	153.7	48.8	25.7	27.0	31.3	10.4
Brunswick	353.0	42.9	17.8	133.3	43.2	34.5
Caroline	253.2	82.0	6.2	209.5	134.5	134.8
Charles City	175.6	42.7	27.0	82.5	49.0	15.2
Chesterfield	262.5	78.0	82.7	177.6	93.7	94.4
Dinwiddie	360.9	120.8	31.5	165.0	86.0	48.3
Essex	118.1	53.8	5.5	85.2	51.0	22.2
Gloucester	143.8	64.8	33.5	96.6	90.2	120.9
Greensville	201.5	52.6	--	110.5	72.5	79.3
Hanover	259.9	21.8	7.3	162.9	168.1	212.4
Henrico	44.5	14.6	--	86.3	43.1	14.3
Isle of Wight	206.2	108.8	26.2	82.5	67.5	125.4
James City	47.3	12.8	10.2	76.6	63.1	17.7
King and Queen	211.0	38.1	6.7	117.2	101.9	47.9
King George	31.7	10.4	12.4	66.0	39.9	50.2
King William	192.7	33.1	46.3	98.7	80.2	59.1
Lancaster	56.8	15.3	3.1	38.7	21.7	7.5
Mathews	46.7	13.1	3.4	15.0	10.0	13.3
Middlesex	58.2	10.9	12.4	48.1	26.7	23.1
Nansemond	176.0	114.5	14.7	163.6	123.5	157.6
New Kent	107.3	23.4	--	103.1	72.8	62.5
Norfolk	127.2	59.2	7.3	131.1	68.7	47.3
Northampton	89.1	35.7	27.2	12.4	4.7	8.5
Northumberland	103.2	7.1	8.6	53.7	20.5	15.4
Prince George	137.6	30.2	31.2	97.8	50.1	10.9
Princess Anne	29.4	33.8	15.0	58.3	38.9	5.4
Richmond	46.5	12.4	12.8	73.7	50.0	36.1
Southampton	451.4	156.7	99.8	218.4	231.3	165.9
Surry	249.5	81.0	--	80.7	76.5	64.0
Sussex	435.3	170.7	61.5	217.1	146.4	130.3
Westmoreland	68.1	8.7	4.7	56.5	54.3	50.6
York	123.3	54.4	38.3	68.9	61.2	74.2
Unit total	5,321.2	1,653.1	679.0	3,214.5	2,272.5	1,959.6

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[1] Log scale, International 1/4-inch rule.

Table 27.--Net volume[1] of all timber by county, species group, and diameter group, 1956

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Accomack	581	271	--	--	239	130	132	11	1,364
Brunswick	1,808	351	6	--	424	179	397	201	3,366
Caroline	1,034	427	2	--	244	439	644	540	3,330
Charles City	650	277	5	9	180	69	278	204	1,672
Chesterfield	1,102	599	--	8	433	144	870	549	3,705
Dinwiddie	1,304	664	22	--	393	179	774	438	3,774
Essex	527	221	--	--	135	110	293	192	1,478
Gloucester	572	356	--	--	222	285	248	384	2,067
Greensville	738	247	7	6	158	229	263	324	1,972
Hanover	1,571	160	4	--	457	573	452	589	3,806
Henrico	305	60	--	--	138	106	261	172	1,042
Isle of Wight	724	488	27	--	208	192	168	387	2,194
James City	184	72	--	7	127	79	297	249	1,015
King and Queen	1,072	241	--	--	439	102	418	413	2,685
King George	277	71	5	--	132	96	269	219	1,069
King William	725	343	4	--	191	131	425	367	2,186
Lancaster	323	72	--	--	95	44	176	67	777
Mathews	133	74	--	--	43	44	83	25	402
Middlesex	244	71	4	24	121	84	161	101	810
Nansemond	389	476	29	35	705	608	270	283	2,795
New Kent	436	114	--	--	149	203	251	243	1,396
Norfolk	279	264	3	21	454	293	137	177	1,628
Northampton	241	241	--	--	28	19	49	32	610
Northumberland	458	71	--	--	126	39	211	114	1,019
Prince George	678	221	--	--	243	84	431	211	1,868
Princess Anne	67	130	--	3	257	98	120	86	761
Richmond	282	106	--	--	160	119	298	202	1,167
Southampton	1,128	732	92	224	702	714	554	565	4,711
Surry	818	378	23	20	322	160	170	309	2,200
Sussex	1,455	833	16	21	557	388	709	563	4,542
Westmoreland	327	74	--	--	147	74	276	260	1,158
York	345	352	2	--	180	193	290	242	1,604
Unit total	20,777	9,057	251	378	8,409	6,207	10,375	8,719	64,173

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[1] Sound wood and bark.

Table 27.--Net volume[1] of all timber by county, species group, and diameter group, 1956 (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Accomack	110	25	--	--	121	36	24	7	323
Brunswick	--	13	--	--	59	42	48	12	174
Caroline	83	14	--	--	84	14	123	73	391
Charles City	10	3	--	--	25	29	46	20	133
Chesterfield	17	21	--	--	27	36	69	14	184
Dinwiddie	--	22	--	--	23	19	58	21	143
Essex	34	9	--	--	6	3	32	74	158
Gloucester	26	6	--	--	43	21	29	10	135
Greensville	13	6	--	21	73	13	51	15	192
Hanover	36	5	--	--	43	36	39	14	173
Henrico	9	--	--	--	18	26	38	4	95
Isle of Wight	14	8	8	--	57	35	38	83	243
James City	--	--	--	--	15	2	24	19	60
King and Queen	47	12	--	--	11	115	12	87	284
King George	28	2	--	--	16	8	17	18	89
King William	8	10	--	--	87	21	39	65	230
Lancaster	21	5	--	--	--	10	19	12	67
Mathews	9	3	--	--	11	12	15	2	52
Middlesex	21	4	--	--	12	12	29	22	100
Nansemond	--	--	--	--	44	71	74	38	227
New Kent	42	14	--	--	18	23	39	43	179
Norfolk	16	5	--	--	82	60	41	7	211
Northampton	13	--	--	--	13	3	12	5	46
Northumberland	16	--	--	--	46	16	38	26	142
Prince George	--	--	--	--	9	12	18	16	55
Princess Anne	7	--	--	--	55	26	39	17	144
Richmond	34	8	--	--	31	36	47	11	167
Southampton	11	--	--	--	99	204	87	13	414
Surry	5	6	--	--	13	55	57	52	188
Sussex	--	10	--	66	43	70	25	50	264
Westmoreland	50	--	--	--	7	3	19	12	91
York	1	--	--	--	17	8	7	5	38
Unit total	681	211	8	87	1,208	1,077	1,253	867	5,392

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[1] Sound wood and bark.

Table 28.--Average annual volume of sawtimber cut by county and species group[1]

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Accomack	55.8	--	--	2.2	58.0
Brunswick	10.2	--	--	1.1	11.3
Caroline	32.4	--	1.0	3.8	37.2
Charles City	4.7	--	--	1.7	6.4
Chesterfield	22.9	--	1.5	14.4	38.8
Dinwiddie	34.7	--	5.7	7.3	47.7
Essex	0.8	--	5.3	6.8	12.9
Gloucester	2.9	--	6.5	1.1	10.5
Greensville	34.0	--	7.6	6.3	47.9
Hanover	18.9	--	12.2	1.3	32.4
Henrico	2.2	--	8.8	3.9	14.9
Isle of Wight	14.1	--	4.8	3.4	22.3
James City	8.9	--	2.1	10.6	21.6
King and Queen	12.7	--	--	9.8	22.5
King George	2.1	--	0.2	8.1	10.4
King William	10.3	--	1.3	7.8	19.4
Lancaster	0.9	--	0.9	7.0	8.8
Mathews	14.3	--	--	--	14.3
Middlesex	5.3	--	--	3.4	8.7
Nansemond	15.9	--	0.9	7.9	24.7
New Kent	31.9	--	--	5.0	36.9
Norfolk	5.3	--	3.3	26.3	34.9
Northampton	6.6	--	0.1	0.3	7.0
Northumberland	0.7	--	3.9	--	4.6
Prince George	12.2	--	0.9	5.1	18.2
Princess Anne	11.0	--	2.0	3.3	16.3
Richmond	6.5	--	--	14.2	20.7
Southampton	17.2	--	4.3	14.8	36.3
Surry	11.3	--	2.6	1.7	15.6
Sussex	44.1	2.8	3.0	7.1	57.0
Westmoreland	1.1	--	0.3	7.2	8.6
York	6.0	--	0.9	4.5	11.4
Unit total	457.9	2.8	80.1	197.4	738.2

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[1] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 29.--Average annual volume of growing stock cut by county and species group[1]

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Accomack	132	--	1	6	139
Brunswick	65	1	1	5	72
Caroline	158	--	3	15	176
Charles City	19	--	--	5	24
Chesterfield	86	--	19	52	157
Dinwiddie	149	--	21	36	206
Essex	3	--	15	18	36
Gloucester	14	--	15	3	32
Greensville	112	--	23	19	154
Hanover	71	--	26	6	103
Henrico	9	--	21	11	41
Isle of Wight	42	--	14	25	81
James City	23	--	8	32	63
King and Queen	42	--	3	30	75
King George	13	--	1	22	36
King William	45	--	5	20	70
Lancaster	2	--	5	21	28
Mathews	36	--	--	--	36
Middlesex	14	--	1	13	28
Nansemond	48	--	4	18	70
New Kent	97	--	1	14	112
Norfolk	12	--	8	62	82
Northampton	17	--	2	1	20
Northumberland	2	--	10	--	12
Prince George	48	--	5	14	67
Princess Anne	30	--	6	8	44
Richmond	26	--	2	38	66
Southampton	49	--	24	51	124
Surry	33	--	7	5	45
Sussex	142	5	12	20	179
Westmoreland	3	--	2	20	25
York	15	--	3	11	29
Unit total	1,557	6	268	601	2,432

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[1] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

> Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.
>
> Hardwood-pine type: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, soft maple, and other hardwood species, except in cases where yellow pines make up 25 to 49 percent and the stand would be classified as oak-pine.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oak, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

Softwood logs1/ must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.

Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications2/ for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Species Groups

Yellow pines: Includes loblolly, pond, shortleaf, and Virginia pine.

Other softwoods: Cypress, eastern redcedar, and Atlantic whitecedar.

Soft hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, willow, elm, hackberry, sycamore, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, river birch, black walnut, black locust, honey locust, mulberry, sourwood, dogwood, holly, and persimmon.

1/ For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

2/ For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board-feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year, minus the partial loss of growth on trees that died or were cut during the year and the loss of volume in trees dying from natural causes during the year. Net growth is based on growth of sound trees. Growth on "Other material" is not included.

In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1956 survey provided an estimate of the total forest area with a standard error of ±0.7 percent. The probabilities were two out of three that the actual forest area was within ±0.7 percent of the estimated acreage. The standard error per million acres was ±1.4 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±2.4 percent, or ±5.2 percent per billion cubic feet. Here again, the probabilities were two out of three that the actual volume did not vary from the estimated volume by more than these percentages. The error of the volume in cords was not computed, but it should have been approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±2.9 percent.

Growth.--Estimates of timber growth were based on measurements of radial growth on 3,696 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number, size, and species of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding the date of inventory were included, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±8.8 percent, or ±3.7 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors in county data are as follows:

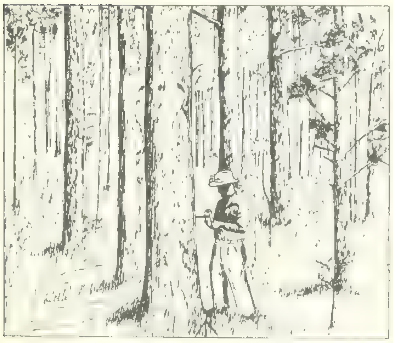
	Percent of error	
Item	Low	High
Forest area	±1.1	±6.2
Growing stock volume	±8.0	±13.1
Board-foot volume	±8.9	±14.6

HOW THE FOREST INVENTORY IS MADE

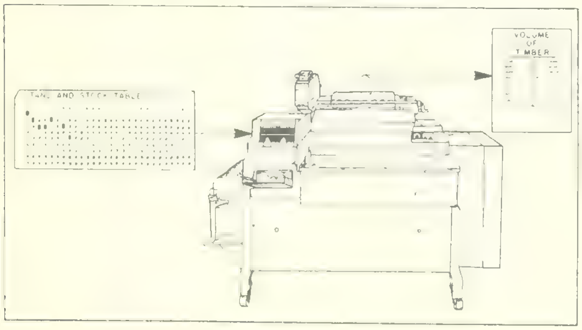
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

Forest Survey Reports Published Since 1945

Forest Statistics:

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
No. 26 - 1946 Commodity Drain by County from South Carolina Forests
No. 28 - South Carolina's Forest Resources, 1947
No. 30 - Forest Resources of Northeast Florida, 1949
No. 31 - Forest Resources of Central Florida, 1949
No. 32 - Forest Resources of Northwest Florida, 1949
No. 33 - Forest Resources of South Florida, 1949
No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948
No. 36 - Forest Statistics for Florida, 1949
No. 37 - Forest Statistics for Southwest Georgia, 1951
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No. 42 - Forest Statistics for North Central and North Georgia, 1953
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No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955 (out of print)
No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955
No. 48 - Forest Statistics for the Piedmont of North Carolina, 1956
No. 49 - North Carolina's Timber Supply, 1955

Pulpwood Production:

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
No. 23 - 1946 Pulpwood Production by County in the Southeast
No. 27 - 1947 Pulpwood Production by County in the Southeast
No. 29 - 1948 Pulpwood Production by County in the Southeast
*No. 35 - 1949 Pulpwood Production in the South (out of print)
*No. 69 - Pulpwood Production in the South, 1950
*No. 38 - 1951 Pulpwood Production in the South
*No. 72 - 1952 Pulpwood Production in the South
*No. 43 - 1953 Pulpwood Production in the South
*No. 76 - 1954 Pulpwood Production in the South
*No. 47 - 1955 Pulpwood Production in the South (out of print)

Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6
The Timber Supply Situation in Georgia, 1956. U. S. Dept. Agr. Resource Report No. 12

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